No-117

DIVISIONAL FOREST OFFICE
Inwd. Regr. No. 117
Dated 4/10/99
WORKING PLANS PARTY II S.C.

DIVISIONAL FOREST OFFICE
SOUTHERN CIRCLE
WORKING PLANS PARTY II

EXPLOSIVES.

I.—Rules to regulate the Transport and Importation of Explosives.

1. In supersession of the Notification by the Government of India, Home Department, No. 1417 (Public), dated the 24th June 1887, and in exercise of the powers conferred by Sections 5 and 7 of the Indian Explosives Act (IV of 1884), the Governor General in Council is pleased to make the following rules to regulate the transport and importation of explosives.

These rules extend to the whole of British India, but the rules relating to the transport of explosives shall cease to apply to any port as defined in the Indian Ports Act (X of 1889), for which special rules made by the Local Government are for the time being in force, in so far as they are expressly superseded by, or are inconsistent with, such special rules.

Nothing in these Rules shall apply to the manufacture, possession, use, sale, transport, or importation of any explosive—

(*a*) by order of the Government, or

(*b*) by any person employed under the Government in the execution of the Indian Explosives Act (IV of 1884) or as a keeper of a magazine, artizan, soldier, sailor, policeman or otherwise, or enrolled as a volunteer under the Indian Volunteers Act (XX of 1869), in the course of his employment or duty as such.

Preliminary.

1. For the purposes of these rules, explosives shall be classified as follows, namely:—

Class 1	...	...	Gunpowder.
Class 2	...	...	Nitrate-mixture.
Class 3	...	...	Nitro-compound.
Class 4	...	...	Chlorate-mixture.
Class 5	...	...	Fulminate.
Class 6	...	...	Ammunition.
Class 7	...	...	Firework.

And when an explosive falls within the description of more than one class, it shall be deemed to belong exclusively to the latest of the classes within the description of which it falls.

Class 1.—*Gunpowder Class.*

The term "gunpowder" means exclusively gunpowder ordinarily so called.

Class 2.—*Nitrate-mixture Class.*

The term "nitrate-mixture" means any preparation, other than gunpowder ordinarily so called, formed by the mechanical mixture of a nitrate with any form of carbon or with any carbonaceous substance not possessed of explosive properties, whether sul-

phur be or be not added to such preparation, and whether such preparation be or be not mechanically mixed with any other non-explosive substance.

The nitrate-mixture class comprises such explosives as—

Pyrolithe,
Pudrolithe,
Poudre saxifragine,

and any preparation coming within the above definition.

CLASS 3.—*Nitro-compound Class.*

The term "nitro-compound" means any chemical compound possessed of explosive properties, or capable of combining with metals to form an explosive compound, which is produced by the chemical action of nitric acid (whether mixed or not with sulphuric acid) or of a nitrate mixed with sulphuric acid upon any carbonaceous substance, whether such compound is mechanically mixed with other substances or not.

The nitro-compound class has two divisions.

Division 1 comprises such explosives as—

Nitro-glycerine,
Dynamite,
Lithofracteur,
Dualine,
Glyoxiline,
Methylic nitrate,

and any chemical compound or mechanically mixed preparation which consists either wholly or partly of nitro-glycerine or some other liquid nitro-compound.

Division 2 comprises such explosives as—

Gun-cotton, ordinarily so called,
Gun-paper,
Xyloidine,
Gun sawdust,
Nitrated gun-cotton,
Cotton gunpowder,
Schultz's powder,
Nitro-mannite,
Picrates,
Picric powder,
Tonite (or cotton-powder),

and any nitro-compound as before defined which is not comprised in the first division.

CLASS 4.—*Chlorate-mixture Class.*

The term "chlorate-mixture" means any explosive containing a chlorate.

The chlorate-mixture class has two divisions.

Division 1 comprises such explosives as—

Horsley's blasting powder,
Brain's blasting powder,

and any chlorate preparation which consists partly of nitro-glycerine or of some other liquid nitro-compound.

Division 2 comprises such explosives as—

Horsley's original blasting powder,
Erhardt's powder,
Reverley's powder,
Hochstadter's blasting charges,
Reichen's blasting charges,
Teutonite,
Chlorated gun-cotton,

and any chlorate-mixture as before defined, which is not comprised in the first division.

CLASS 5.—*Fulminate Class.*

The term 'fulminate' means any chemical compound or mechanical mixture, whether included in the foregoing classes or not, which from its great susceptibility to detonation, is suitable for employment in percussion-caps or any other appliances for developing detonation, or which, from its extreme sensibility to explosion and from its great instability (that is to say, readiness to undergo decomposition from very slight exciting causes), is especially dangerous.

The fulminate class has two divisions.

Division 1 comprises such compounds as the fulminates of silver and of mercury and preparations of these substances, such as are used in percussion-caps, and any preparation consisting of a mixture of a chlorate with phosphorus, or certain descriptions of phosphorus compounds, with or without the addition of carbonaceous matter, and any preparation consisting of a mixture of a chlorate with sulphur, or with a sulphurate, with or without carbonaceous matter.

Division 2 comprises such substances as the chloride and the iodide of nitrogen, fulminating gold and silver, diazobenzol, and the nitrate of diazobenzol.

CLASS 6.—*Ammunition Class.*

The term "ammunition" means an explosive of any of the foregoing classes when enclosed in any case or contrivance, or otherwise adapted or prepared so as to form a cartridge or charge for small-arms, cannon, or any other weapon, or for blasting or to form any safety or other fuze for blasting, or for shells, or to form any tube for firing explosives, or to form a percussion-cap, a detonator, a fog-signal, a shell, a torpedo, a war-rocket, or other contrivance other than a firework.

The term "percussion-cap" does not include a detonator.

The term "detonator" means a capsule or case which is of such strength and construction, and contains an explosive of the fulminate-explosive class in such quantity that the explosion of one capsule or case will communicate the explosion to other like capsules or cases.

The term "safety fuze" means a fuze for blasting, which burns and does not explode, and which does

not contain its own means of ignition, and which is of such strength and construction, and contains an explosive in such quantity that the burning of such fuze will not communicate laterally with other like fuzes.

The expression "safety cartridges" means cartridges for small-arms of which the case can be extracted from the small-arm after firing, and which are so closed as to prevent any explosion in one cartridge being communicated to other cartridges. The term also includes rifle-calibre machine-guns cartridges if they are of the above description, whether they are for use with machine-guns having chambers identical with those of rifles or with machine-guns which have special chambers.

The maximum gauge at which a small-arm cartridge can be accepted as "safety" is one inch. The following are the gauges of the machine-gun cartridges which may be accepted as "safety":—

·303-inch cordite.

Martini-Henry rifle, solid case.

·45-inch Gardner, Gatling and Nordenfeldt, except Martini-Henry chambered guns.

·4-inch.

Cartridges of larger gauge are not safety cartridges.

The ammunition class has three divisions.

Division 1 comprises exclusively—

Safety cartridges,

Safety fuzes for blasting,

Fuzes for shells, and tubes friction for guns, provided there be no more than five fuzes or 25 tubes in one package, and that the package be a hermetically sealed metal cylinder,

Railway fog signals,

Percussion-caps.

Division 2 comprises any ammunition as before defined which does not contain its own means of ignition and is not included in division 1, such as—

Cartridges for small-arms, which are not safety cartridges,

Cartridges and charges for cannon, shells, mines, blasting, or other like purposes,

Shells and torpedoes containing any explosive,

Fuzes for blasting, which are not safety fuzes,

Fuzes for shells,

Tubes for firing explosives,

War-rockets,

which do not contain their own means of ignition.

Division 3 comprises any ammunition, as before defined, which contains its own means of ignition and is not included in division 1, such as—

Detonators,

Cartridges for small-arms, which are not safety cartridges,

Fuzes for blasting, which are not safety fuzes,

Fuzes for shells,

Tubes for firing explosives,

which do contain their own means of ignition.

By ammunition containing its own means of ignition is meant ammunition having an arrangement, whether attached to it or forming part of it, which is adapted to explode or fire the same by friction or percussion.

CLASS 7.—*Firework Class.*

The firework class has two divisions.

Division 1 comprises firework compositions, that is to say, any chemical compound or mechanically mixed preparation of an explosive or inflammable nature, which is used for the purpose of making manufactured fireworks, and is not included in the former classes of explosives, and also any star and any coloured fire composition, subject to the proviso hereinafter set forth.

Division 2 comprises manufactured fireworks, that is to say, any explosive of any of the foregoing classes and any firework composition, when such explosive or composition is enclosed in any case or contrivance, or is otherwise manufactured so as to form a squib, cracker, toy cap or amorce, serpent, rocket (other than a war-rocket), maroon, lance, wheel, Chinese fire, Roman candle, or other article specially adapted for the production of pyrotechnic effects or pyrotechnic signals or sound signals.

Provided that a substantially constructed and hermetically closed metal case containing not more than 1 lb. of coloured fire composition of such a nature as not to be liable to spontaneous ignition shall be deemed to be a "manufactured firework".

TRANSPORT.

(*a*) *Packing.*

2. The following general rules shall be observed with respect to the packing of explosives for conveyance:—

I.—Each class of explosive shall be separately packed.

II.—An explosive, not being an explosive of the 5th (fulminate) class, or of the 2nd and 3rd divisions of the 6th (ammunition) class, or of the 1st division of the 7th (firework) class, shall, if not exceeding 5 lbs. in quantity, be contained in a substantial case, bag, canister, or other receptacle made and closed so as to prevent the explosive from escaping.

III.—In every other case the explosive shall be contained in a double package. The inner package shall be a substantial case, bag, canister, or other recepta-

cle made and closed so as to prevent the explosive from escaping, and the outer package shall be a box, barrel, or case of wood or metal or other solid material, and shall be of such strength, construction, and character that it will not be broken or accidentally opened, or become defective or insecure whilst being conveyed, and will not allow the explosive to escape:

Provided as follows:

(*a*) If the explosive is of the 1st (or gunpowder) class or of the 2nd (nitrate-mixture) class, or is gun-cotton or another explosive of the 2nd division of the 3rd (nitro-compound) class, the quantity of the explosive in any one outer package shall not, in the case of explosives of the first two classes, exceed 100 lbs., and in other cases 50 lbs.

If the explosive is picric acid, the inner package must be of such a nature as to effectually prevent any picric acid from coming into contact with any basic metallic oxide.*

(*b*) If the explosive belongs to the 1st division of the 3rd (nitro-compound) class or to the 4th (chlorate-mixture) class, the inner package shall be without any metal in its construction, and the inner or outer package or both shall be thoroughly waterproof.† No one of the inner packages shall contain more than 10 lbs., and the aggregate quantity of the explosive in any one outer package shall not exceed 50 lbs.

(*c*)—1. If the explosive belongs to the 5th (fulminate) class, and is of such character that it cannot be packed mixed with water, or that danger would arise from such mode of packing, it shall be packed in such manner as shall be specially directed by the Governor-General in Council.

2. Any other explosive of the fulminate class shall be packed as follows: It shall be packed in bags or coverings of calico, canvas, or other material permeable to water, and containing each not more than 25 lbs. of fulminate, and so made and closed as to prevent any explosive from escaping. Such bags or coverings shall be packed

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* *Note.*—This rule is intended to prevent picric acid being packed in a case lined with certain metals, such as zinc or lead, which would result in danger arising from the formation of a picrate. Waterproof bags inside powder-barrels are suggested as a simple and safe method of packing picric acid for transport or storage.

† *Note.*—From the requisition that the package should be waterproof are excepted—

(1) All explosives falling in the 2nd division of the 4th (chlorate-mixture) class.

(2) Those explosives included in the 1st division of the 3rd (nitro-compound) class which do not yield up their nitro-glycerine in contact with water, such as blasting gelatine, gelatine dynamite, cordite and ballistite, and gelignite: provided that any other substance than those named has been certified to be of this character by a Chief Inspector of Explosives.

in a case containing sufficient water to ensure the explosive being kept constantly wet, and such case (hereinafter called the inner case) shall be packed in an outer case containing sufficient water constantly to surround the inner case; and the inner case and the outer case shall each be of such strength, construction, and character that it will not be broken or accidentally opened or become defective or insecure whilst being conveyed, and will not allow any fulminate or water to escape; and the amount of the explosive in any one outer case shall not exceed 200 lbs., except with the consent of, and under conditions approved by, an Inspector of Explosives.

3. Every package when actually used for the packing of one fulminate shall not be used for the packing of any other fulminate or for any other purpose.

4. On the outer case there shall be affixed in conspicuous characters by means of a brand or securely attached label or other mark the word "Explosive," with the name of the explosive followed by the words "Fulminate, Division 1" (or 2 as the case may be) and the name and address of the owner or sender.

(*d*)—1. If an explosive belongs to the 1st division of the 6th (ammunition) class, it shall be contained in a box, barrel, or case of wood, metal, or other solid material, and of such strength, construction, and character that it will not be broken or accidentally opened or become defective or insecure whilst being conveyed, and will not allow any explosive to escape.

2. If the explosive belongs to the 2nd division of the 6th (ammunition) class, the following rules shall apply, *viz.*:—

(i) A shell or torpedo containing any explosive material, whether such shell or torpedo be separate or form part of a rocket or other appliance, shall be packed in such manner as may be specially directed by the Governor-General in Council with reference to such explosive.

(ii) Any explosive material when made up into a cartridge or charge for cannon, shells, mines, blasting, or other like purposes, shall be packed in the manner required for the same explosive material when not so made up:

Provided that where a double package is required, the enclosing case of such cartridge or charge, if it satisfies the conditions required for the inner package, may be held to be such inner package.

(iii) Any other explosive of the 2nd division shall be packed in a box, barrel, or case of wood, metal, or other solid material, and of such strength, construction, and character that it

will not be broken or accidentally opened, or become defective or insecure whilst being conveyed, and will not allow any explosive to escape: and any one such package shall not contain more than 100 lbs. of ammunition.

(*e*) If the explosive belongs to the 3rd division of the 6th (ammunition) class, it shall be packed in a double package. The inner package shall not contain more than 2 lbs. of such explosive, and no more than 50 lbs. shall be contained in the outer package.

(*f*) If the explosive belongs to the 1st division of the 7th (firework) class, it shall be contained in a double package. The inner package shall be a substantial canister, case, or other receptacle hermetically closed, and containing no more than 1 lb. of explosive, and no more than 20 lbs. shall be contained in the outer package; and

(*g*) If the explosive belongs to the 2nd division of the 7th (firework) class, it shall be contained in a box, barrel, or case of wood, metal, or other solid material, and of such strength, construction, and character that it will not be broken or accidentally opened, or become defective or insecure whilst being conveyed, and will not allow any explosive to escape, and the quantity of explosive in any one package shall not exceed 100 lbs.

IV.—Whatever be the amount of the explosive, and to whatever class or division of a class it belongs, the following conditions shall be observed:—

(*a*) The interior of every package, whether single or double, shall be kept free from grit and otherwise clean;

(*b*) every package, whether single or double, when actually used for the packing of the explosive, shall not be used for the packing of any other explosive of the same or any other class or for any other purpose, except with the consent of, and under conditions approved by, an Inspector of Explosives;

(*c*) there shall be any iron or steel in the construction of any such single package or inner or outer package unless the same is effectually covered with tin, zinc, or other suitable material;

(*d*) on the outermost package there shall be affixed, in conspicuous characters, by means of a brand or securely attached label or mark, the word "Explosive," followed by the name of the explosive or other description of the contents, and the name and address of the owners or senders; and

(*e*) the amount of the explosive in any single package, or, if there is a double package, in any one outer package, shall not exceed the amount specified in the foregoing rules, except with the consent of, and under conditions to be approved

by, an Inspector of Explosives or other officer appointed by the Local Government in this behalf.

3. Whoever commits a breach of any of the foregoing rules relating to the packing of explosives for conveyance, shall be punishable with fine which may extend to Rs. 1,000.*

(*b*) *Mode of conveyance.*

4. The following general rules shall be observed with respect to the conveyance of explosives :—.

I.—No explosive shall be conveyed from place to place unless packed in the manner provided for in the foregoing rules.

II.—There shall not be conveyed in any carriage or vessel, which is being used for the conveyance of an explosive, any explosive of a different class and division, of whatsoever nature, which contains its own means of ignition, unless it is sufficiently separated therefrom to prevent any fire or explosion which may take place in one such explosive being communicated to another.

III.—Except in the case of small consignments carried by railway, which may be unloaded at any time, explosives shall be loaded or unloaded only between sunrise and sunset. For the purposes of this rule no consignment of more than half a wagon-load booked to one station shall be deemed to be a small consignment.

IV.—Whilst the explosive is being loaded on or unloaded out of any carriage or vessel, no fire or artificial light, nor any article which is liable to cause or communicate fire or explosion [such as charcoal, lucifer-matches, articles for striking a light, petroleum to which the Petroleum Act (XII of 1886) or any other Act for the time being in force regarding the importation, possession, and transport of petroleum, applies, or any spirit or oil or substance that gives forth an inflammable vapour at a temperature below 100° Fahrenheit] shall be, or shall be allowed to be, brought, had, or used dangerously near to such carriage, ship, or boat, and no smoking shall be allowed in, on, or dangerously near, to the same:

Provided that when the use of a light for the purposes of such loading or unloading is unavoidable, a lamp of such construction, position, or character as not to cause any danger from fire or explosion may be used; and no person, while handling any explosive (except an explosive of division 1, class 6, or an explosive of class 7, if packed in accordance with the packing rules) shall wear boots or shoes with iron or steel nails, heels, or tips.

V.—In the loading or unloading of any explosive, the casks and packages containing the same shall be

* Rules regarding search for, and detention of, explosives contravening regulations have been issued by the Local Governments.

passed from hand to hand and not rolled upon the ground; they shall not be thrown or dropped down, but shall be carefully deposited and stowed.

VI.—The explosive shall not be conveyed except in the interior of a carriage so enclosed on all sides with wood or metal, or in the hold of a ship or boat having a close deck so closed, as effectually to protect the explosive against accident by fire from without. If the explosive cannot be so secured, it shall be completely covered with painted cloth, tarpaulin, or other suitable material so as to effectually protect it against communication of fire.

VII.—There shall not be any iron or steel in the interior of the portion of the carriage or vessel with which the case containing the explosive is in contact, unless the same is effectually covered with leather, wood, cloth or other suitable material.

VIII.—In the stowing of the explosive, due precautions shall be taken by means of a partition or otherwise, and by careful stowing to secure such explosive from being brought into contact with, or endangered by, any other article or substance conveyed in such carriage or vessel which is liable to cause fire or explosion; and if the explosive is dangerously affected by water, due precautions shall be taken to exclude water from coming into contact with such explosive.

IX.—The amount of the explosives conveyed in any one carriage or vessel at any one time shall not exceed 2,000 lbs., unless the carriage be so enclosed on all sides with wood or metal, or the vessel have a close deck so closed, as effectually to protect the explosive against accident by fire from without, in which case the amount of the explosives conveyed shall not exceed the following:—

In any one carriage on a railway ...	10 tons.
In any one other carriage	2 "
In any one vessel	20 "

Note.—This rule shall, in the case of dynamite conveyed by railway, be read subject to paragraph XII of Rule 6.

X.—Nothing in the foregoing rules (except Rule I) shall apply to any explosive of the 1st division of the 6th (ammunition) class:

Provided that all due precautions are taken for the prevention of accidents.

5. The following rules shall be observed with respect to the conveyance of explosives otherwise than by railway:—

I.—No explosive shall be conveyed in a carriage or boat whilst carrying or plying for public passengers, unless the quantity is less than 5 lbs., and notice has been given beforehand to the person in charge of such carriage or boat:

Provided that there shall not be conveyed in any such carriage or boat any explosive of the 5th (fulminate) class, or any explosive of the 3rd division of the 6th (ammunition) class or of the 1st division of the 3rd (nitro-compound) class, except—

(*i*) dynamite which may be carried in the form of cartridges up to the limit of 5 lbs.:

Provided that no detonators are carried in the same compartment; and

(*ii*) detonators to the number of 200:

Provided that the amount of explosive of the 5th (fulminate) class in the detonators shall in no case exceed in the aggregate 3 oz. (a certificate to this effect being given by the Agent of the Company by whom the detonators are tendered for transport):

Provided also that no dynamite is carried in the same compartment.

II.—With respect to the conveyance by carriage or vessel of explosives of the 5th (fulminate) class, or of the 3rd division of the 6th (ammunition) class, or of the 1st division of the 7th (firework) class, or of larger quantities than 5 lbs. of any other explosive, the following regulations shall be observed:—

(1) The person in charge of the carriage or vessel shall not drive or conduct the same in a dangerous or reckless manner, and shall take all due precautions to avoid fire and explosion, and no person shall do any act or thing in relation to the explosive which tends to cause fire or explosion, and is not reasonably necessary for the conveyance of the explosive or for work immediately connected with such conveyance; and a person who is intoxicated shall not have charge of any carriage or vessel conveying explosive, and shall not be permitted to be in, or on, or attending the same.

(2) A person shall not forward to any warehouseman or carrier a consignment of explosive, unless he has given notice to such warehouseman or carrier beforehand, stating the name and quantity of the explosive proposed to be conveyed, and the name and address of the proposed consignee, and has had an intimation that the warehouseman or carrier is prepared to receive the consignment; and a warehouseman or carrier shall not make such an intimation, nor receive such consignment, unless he is prepared to receive it, and forthwith to despatch the same, or to deposit it in a magazine or at a place at which a person is licensed to possess the same.

(3) The carriage or vessel conveying the explosive shall be in charge of, and constantly attended by, some competent person, or by a sufficient number of competent persons, and such persons shall not, if the amount of the explosive conveyed exceed 100 lbs., stop or delay for a longer time than may be reasonably necessary, or stop unnecessarily at any place where such stopping would be attended with special public danger.

6. The following rules shall be observed with respect to the conveyance of explosives by public railway:—

I.—No person shall send for carriage upon any railway any consignment of an explosive, unless he has given to the officer in charge of the railway station previous notice in writing which, at the option of the Railway Administration, may extend to 48 hours, of his intention to send such consignment, and stating the true name, description, quantity, and mode of packing of the explosive proposed to be conveyed, and his own name and address, and also the name and address of the proposed consignee, and unless he has had an intimation in writing from an authorized officer of the railway that such consignment will be received.

II.—No explosive which a Railway Administration shall, by any notice or regulation for the time being in force, notify that they will not receive, shall be brought, sent, or forwarded to, or upon, any railway of the said Railway Administration.

III.—Consignments of explosives shall be sent to the forwarding station and shall be received by the railway servants, only at such times, between sunrise and sunset, as the Railway Administration may appoint; and every package containing any explosive proposed to be conveyed on any railway shall immediately on arrival at the station be unloaded and placed in a safe place under the special direction of the officer in charge of the station.

All gunpowder under despatch or receipt by a Government arsenal, depôt, or factory, shall be loaded or unloaded in the railway vans by Government servants employed in such arsenal, depôt or factory. In each van used by the railway for the transport of gunpowder the packages of gunpowder shall be secured in such a way as to prevent concussion when the train is in motion.

IV.—An explosive shall be removed by the consignee from the receiving station during the twelve hours of daylight after arrival: if this condition is not strictly complied with, the Railway Administration may return the consignment to the consignor at his risk and expense. And such packages shall in the meanwhile be kept as far away from the station buildings as possible in the wagon they were conveyed in, or, if unloaded, shall be completely covered with tarpaulins or other suitable material, and, if necessary, shall be protected by a police guard.

V.—The Railway Administration may refuse to receive any packages which they suspect to contain any explosive packed or sent in contravention of these regulations. And in case any package, which the Railway Administration suspect, shall be upon any railway, the Railway Administration may open, or require to be opened, such package,

to ascertain the fact, at the risk and expense of the consignor, and may return the explosive contained in the package to the consignor at his risk and expense, keeping the packages, pending such return, in the manner prescribed in the preceding rule.

VI.—Subject to the exception provided for in clause (*e*), no explosive shall be conveyed by passenger-train except of the kinds and in the manner hereinafter specified in this rule :—

(*a*) Safety cartridges and percussion-caps and safety-fuze (for blasting), also fog-signals for railway use, which may be conveyed in ordinary wagons or carriages.

(*b*) Dynamite which may be carried in the form of cartridges up to the limit of 5 lbs. :

Provided that no detonators are carried in the same compartment.

(*c*) Detonators which may be carried to the number of 200 :

Provided that in no case the amount of fulminate of mercury in the package or packages containing the detonators exceeds in the aggregate 3 oz. (a certificate to this effect being given by the Company, firm or person tendering the detonators for transport or by its or his agent) :

Provided also that no dynamite is carried in the same compartment.

(*d*) Sporting gunpowder or non-safety cartridges packed in double cases as before provided, so long as the gunpowder is contained in one-pound tin canisters packed in a stout wooden case with an outer covering of tin or zinc completely spark-proof, or in metal-lined cases of a pattern approved by the Railway Administration. But no outer case shall contain more than 25 lbs. of gunpowder, and the total consignment of gunpowder or non-safety cartridges by one train shall not exceed 80 lbs.

(*e*) Explosives may be carried by mixed trains on any line on which goods trains are not running, subject to the conditions that not more than one vehicle containing explosives is forwarded at any one time by a mixed train ; that the precautions prescribed for conveyance by goods trains are observed ; and that directly a wagon containing explosives arrives at a section on which goods trains are running, it is detached from the mixed trains.

VII.—Not more than five carriages containing explosives shall be loaded or unloaded at any railway station, or be conveyed by any one train at any one time ; and the quantity of explosive to be contained in any one carriage shall not exceed

two-thirds of the normal load, unless the carriages shall be specially built and approved of by the Government of India for the conveyance of explosives. But nothing in this clause shall be held to apply to separate consignments of small-arms ammunition.

VIII.—There shall not be conveyed in the same carriage with any explosive, any lucifer or other matches, fuzes, pipelights, acids, naphtha, paraffine, petroleum to which the Petroleum Act (XII of 1886), or any other Act for the time being in force regarding the importation, possession and transport of petroleum, applies, or any other volatile spirit or substance liable to give off an inflammable vapour or liable to spontaneous ignition, or to cause or communicate fire or explosion.

IX.—The consignor shall attach to the consignment note a certificate or (provided the original is produced for verification) copy of a certificate, signed by an officer authorized by the Local Government in this behalf that the explosive, if it is an explosive of class 3 or 4, is of the standard purity; and further, in the case of dynamite, and all nitro-glycerine compounds, that there are no signs of exuded nitro-glycerine or of liquefaction. The consignor shall also certify that the explosive has been packed in accordance with the packing rules in force in England or in British India.

X.—In the case of explosives under classes 3 and 4 the outer packages shall be marked with the date of the manufacture of the explosives. The abovementioned certificate shall contain sufficient information to admit of all packages being easily recognised.

XI.—The certificate referred to in Rule IX. shall be valid for six months after date, if the examination has been made between the 15th October and 31st March; but any Railway Administration which accepts dynamite for transport may demand a fresh certificate for dynamite presented for conveyance between 1st April and 15th October (both inclusive).

XII.—Packages containing dynamite shall be stowed in one layer only and secured so as to prevent movement during transit, and the gross load in any one wagon shall not exceed 3 tons:

Provided that, if the packages of dynamite are in rectangular form and are properly secured so as to prevent movement during transit, they may be stowed in any number of layers not exceeding five, and the gross load in any one wagon shall not exceed 5 tons.

XIII.—No explosive belonging to the 5th (fulminate) class or to class VI, division 3, shall be carried in the same train with dynamite, or with any other explosive belonging to class III, division 1.

XIV.—Wagons used for the carriage of explosives shall be examined to see that they are spark-proof, and have been cleaned out before they are loaded. Hair, cloth, hides, or other suitable materials shall be spread on the floor of the wagon and between each layer of packages, except when the packages are covered with gunny or felt, or contain small-arms ammunition packed in tin-lined service-pattern boxes.

XV.—Wagons containing explosives shall be loaded and unloaded on sidings distant as far as possible from the station buildings.

XVI.—Five layers of packages in rectangular form and of uniform size (provided they are double packages, and are so secured as to prevent movement during transit) may be packed one above another. Otherwise not more than three layers of packages containing explosives shall be packed one above another. But in the case of small-arms ammunition packed in tin-lined service-pattern boxes, there is no restriction. Subject to the provisions of Rule 4 (III), the loading and unloading of explosives when once begun shall be diligently proceeded with until the same is completed.

XVII.—When the train is being marshalled, wagons loaded with explosives may be shunted by a locomotive, if they are separated from the engine by not less than three wagons containing no explosive nor easily inflammable substance; this precaution is not necessary with wagons specially constructed for the carriage of explosives. The speed of these movements shall be restricted to 5 miles an hour; they shall be superintended by a duly authorized officer, who shall be held responsible for the observance of these orders. Flying shunts are strictly prohibited.

XVIII.—Wagons containing explosives shall be placed at the end of the train away from the locomotive, and shall be close coupled to one another, as well as to the adjoining wagons, and preceded and followed by three wagons not loaded with explosives or other traffic of an inflammable nature.

XIX.—If the wagons employed in the transport of explosives are provided with brakes other than iron brakes, the brakes thereon shall on no account be worked while the wagons are running with a train, nor shall brakes, other than iron brakes, on vehicles immediately adjoining such wagons, be worked while such wagons are so running.

G. I., H. D., No. 499, dated 3rd March 1899; *vide* G. N. No. 1805, dated 8th idem.

XX.—Wagons shall in every case be locked when loaded with explosives.

XXI.—All operations connected with the transhipment of explosives at junction stations shall take place during daylight.

7. Whoever commits a breach of any of the foregoing rules relating to the mode of conveyance of explosives, shall be punishable with a fine which may extend to Rs. 100.

IMPORTATION.

8. An explosive shall not be imported by sea into British India, except under, and in accordance with, the conditions of a license to import the explosive granted under these rules:

Provided that any explosive other than an explosive specified in Rule 11 may, previous to the grant of an importation license, if certified to be of British manufacture or, if not of British manufacture, if imported from the United Kingdom and covered by the certificate granted by one of Her Majesty's Inspectors of Explosives in England, be landed in accordance with such regulations as the Local Government may prescribe in this behalf, and be stored in a place set apart by the Local Government for this purpose. The Governor General in Council may extend this privilege to any such explosive not of British manufacture regarding which he is satisfied that it has been manufactured under adequate official supervision.

Before any explosive is landed under the proviso to this rule, the consignee shall give to the Chief Customs Officer of the Port such undertaking, with or without security, as the said officer thinks sufficient, to obey, in the event of the explosive failing to satisfy the prescribed tests, such directions as to its disposal as the Local Government may see fit to prescribe.

If samples are taken by an officer deputed by the Chief Customs Officer on board the ship on its arrival the procedure shall be that prescribed in Rule 15.

9. Whoever imports an explosive in contravention of Rule 8, he shall be punishable with fine which may extend to Rs. 3,000.

10. An explosive shall not be imported by sea except at the ports of Calcutta, Madras, Bombay, Rangoon, Calicut, Karáchi, and Aden; but a license to import an explosive by sea from Rangoon into the ports of Akyab, Moulmein, Sandoway, Kyouk-Phyoo, Tavoy and Mergui may be granted by the Magistrates of the Districts in which these ports are respectively situated. The fee payable in respect of each such license shall be one rupee, and the license shall be in Form A in the Schedule hereto annexed.

11. If the explosive is gunpowder or an explosive of the 1st division of the 6th (ammunition) class or an explosive of the 7th (firework) class, the license to import the same may be granted at the ports of Calcutta, Madras, and Bombay by the Commissioner of Police, and at the ports of Rangoon, Calicut, Karáchi, and Aden by the District Magistrate.

12. The fee payable in respect of each such license shall be Rs. 10, but if any explosive imported under a license into a British port is exported thence to another British port named in Rule 10, the necessary license for such re-import may be granted on payment of a fee of one rupee instead of Rs. 10.

*13. Licenses for the importation by sea of any explosives other than those specified in Rule 11 shall be granted by the Local Government or by some officer specially authorized by the Local Government in this behalf.

14. No license shall be granted for the importation of any explosive of the description referred to in Rule 13, if it be an explosive for which a test or examination has been prescribed by or under the orders of the Government of India, unless samples of the explosive taken, as hereinafter provided, are certified by the Chemical Examiner or some other officer appointed by the Local Government in this behalf to have passed the test or examination from time to time prescribed.

15. On the arrival, in any port at which the importation of explosives is lawful, of a ship having on board an explosive other than an explosive of the description referred to in Rule 11, such officer as the Chief Customs Officer authorizes in this behalf shall, as soon as may be, proceed on board and shall, if testing or examination is requisite under the last preceding rule, obtain samples of the explosive.

All explosives of which samples are taken for examination shall be forthwith deposited in a duly licensed place or places of storage, and shall not be distributed for use until the importer has received from the licensing authority notice that it may be so distributed.

The master of the ship shall give to the said officer, without charge, such samples as he may require. The said officer shall affix to each such sample the name of the ship and of the consignee and such other distinguishing marks as he may think necessary, and shall forward the same to the Chemical Examiner or officer as aforesaid for report.

The Chemical Examiner or officer as aforesaid, after testing the said samples, shall without delay forward to the licensing authority, through the Chief Customs Officer, a report under his signature certifying whether the explosive has satisfied the prescribed test.

15-A. Explosives, other than those referred to in Rule 11, which have already undergone the test prescribed by Rules 14 and 15 at the ports of Calcutta, Madras, Bombay, Rangoon, Calicut, Karáchi or Aden, may be re-imported by sea into any other

* Under No. 13 of the rules to regulate the transport and importation of explosives published with Government Notification No. 5283, dated 14th July 1897, His Excellency the Governor in Council is pleased to authorize the Commissioner in Sind to grant the import licenses therein referred to at the port of Karáchi. G. N. No. 2686, dated 17th April 1899.

of those ports under a license granted under Rule 13, without re-testing, but subject, in the case of such explosives as are mentioned in Rule 6, Clause IX, to the production of the certificate prescribed in that clause.

Such certificate shall be valid for six months after date, if the examination has been made between the 15th October and 31st March; but in the case of dynamite, a fresh certificate may be demanded if the consignment is imported between the 1st April and 15th October (both inclusive).

16. The period for which a license to import an explosive, granted under Rule 13, shall continue in force shall not exceed such period as may seem necessary to the authority granting the license.

17. The fee payable on a license granted under Rule 13 shall be Rs. 10, but, if any explosive imported under a license into a British port is exported thence to another British port named in Rule 10, the necessary license for such re-import may be granted on payment of a fee of one rupee instead of Rs. 10.

18. Every license granted under Rules 11 and 13 shall be in Form A in the Schedule hereto annexed, and shall be subject to the conditions therein prescribed, and also to such additional conditions with respect to the time and place of unloading, landing, delivery, and conveyance of the explosive, and such other conditions as may in each case be thought by the licensing officer to be necessary for the public safety or in the interests of the State.

19. Whoever commits a breach of any condition subject to which a license under Rules 11 and 13 is granted, shall be punishable with fine which may extend to Rs. 3,000.

GENERAL.

20. Every license granted under these rules shall be liable to be forfeited on breach of any of the conditions subject to which it is granted.

21. If a person licensed to import an explosive dies or becomes bankrupt, or becomes mentally incapable or otherwise disabled, the person carrying on the business of such licensee shall not be liable to any penalty or forfeiture under the Indian Explosives (Act IV of 1884) or the rules thereunder for acting under the license during such reasonable time as may be necessary to allow him to make an application to the authority granting the license for a new license in his own name during the currency of the unexpired portion of the original license. Such new license shall be granted on the payment of one rupee.

22. The fees leviable under these rules shall be taken in the shape of impressed stamps. Ordinarily the applications for licenses or renewals of licenses shall, if not otherwise provided, be written on impressed stamps of value equal to the amount of fee leviable in respect of such licenses or renewals,

the licenses themselves being issued on plain paper. But when the licenses themselves are written or printed on impressed stamps, the application may be on plain paper. When an application for license is written on an impressed stamp, and the license is refused, the value of the stamp will on application be refunded to the applicant.

23. When a license granted in accordance with these rules is lost, or accidentally destroyed, a duplicate may be granted to the licensee on payment of a fee of 8 annas.

24. Any person holding a license, or acting under a license granted in accordance with these rules, shall be bound to produce the same when called upon to do so by any Magistrate, or by any Police officer in charge of a Police station, or by any Police officer of higher rank.

25. All Magistrates or other authorities acting under these rules shall perform their duties subject to the control of their executive superiors and of the Local Government.

26. Any authority empowered to grant a license under the foregoing rules may, if he thinks fit, direct by any order written on the license that it shall have the effect of a like license under the Indian Arms Act (XI of 1878).

27. Any persons lawfully entitled under the Indian Arms Act, 1878 (XI of 1878), or the rules thereunder, to possess any explosive coming under the head of ammunition, as defined in that Act, may possess or import without license under these rules any such explosive in such quantities as may be prescribed by that Act or the rules thereunder, or, when no quantities are prescribed, in reasonable quantities for his own private use, but, when an explosive is so imported, the Collector of Customs or any other officer empowered by the Local Government in this behalf by name or by virtue of his office, may at any time detain such explosive until he receives the orders of the Local Government thereon.

G. I., H. D., No. 2177, dated 4th November 1898; *vide* G. N. No. 7190, dated 9th idem.

Form A.

(See Rules 11, 13 and 18.)

FEE—TEN RUPEES IN STAMPS.

License to import Explosives into the Port of _____

Name, &c., and address of license-holder	Number of packages.	EXPLOSIVE.			Purpose for which required.	Destination.	Period for which the license is valid.
		Description.	Weight.	Number.			
							From the _____ th of _____ to the _____ th of _____ 18 ,

The _____ of _____

189 .

Seal.

(Signature)

_____ of _____

Conditions.

1. This license is given subject to the provisions of "The Indian Explosives Act (IV of 1884)," and the Rules framed thereunder. Certain general rules are quoted separately below.

2. This license shall become void after expiry of the period named thereon.

3. This license is valid for importation only: if the articles named herein are to be transported to any place outside the Presidency Town, they must be protected by a transport license, to be issued in accordance with the rules framed under the Indian Arms Act (XI of 1878).

4. On the outside of each package there shall be affixed in conspicuous characters by means of a brand or securely attached label or mark the word "Explosive," followed by the name of the explosive or other description of the contents, and the name and address of the owners or senders.

GENERAL RULES.

* * *

20. Every license granted under these rules shall be liable to be forfeited on breach of any of the conditions subject to which it is granted.

21. If a person licensed to import an explosive dies or becomes bankrupt or becomes mentally incapable or otherwise disabled, the person carrying on the business of such licensee shall not be liable to any penalty or forfeiture under the Act or the rules made thereunder for acting under the license during such reasonable time as may be necessary to allow him to make an application to the authority granting the license for a new license in his own name during the currency of the unexpired portion of the original license. Such new license shall be granted on the payment of one rupee.

22. The fees leviable under these rules shall be taken in the shape of impressed stamps. Ordinarily the applications for license or renewals of licenses shall, if not otherwise provided, be written on impressed stamps of value equal to the amount of fee leviable in respect of such licenses or renewals, the licenses themselves being issued on plain paper. But when the licenses themselves are written or printed on impressed stamps, the application may be on plain paper. When an application for license is written on an impressed stamp, and the license is refused, the value of the stamp will, on application, be refunded to the applicant.

23. When a license granted in accordance with these rules is lost, or accidentally destroyed, a duplicate may be granted to the licensee on payment of a fee of 8 annas.

24. Any person holding a license, or acting under a license granted in accordance with these rules, shall be bound to produce the same when called upon to do so by any Magistrate, or by any

Police officer in charge of a Police station, or by any Police officer of higher rank.

(G. I., H. D., Notn. No. 1393, dated 8th July 1897; *vide* G. N. No. 5283, dated 14th idem.)

RULE FOR TESTING EXPLOSIVES.

2. With reference to Rule 14 of the rules to regulate the transport and importation of explosives published with Home Department Notification No. 1393, dated the 8th July 1897, the Governor-General in Council is pleased to make the following rule on the subject of the tests which explosives should be required to pass before their importation is permitted:—

Rule.

Class 1.—Gunpowder class. Gunpowder is not required to pass a test.

Class 2.—Nitrate-mixture class. Nitrate-mixture explosives are not ordinarily required to pass a test. The Local Government, however, or the authorized officer granting the import license under Rule 13 of the Rules to regulate the transport and importation of explosives published with Home Department Notification No. 1393, dated the 8th July 1897, may in any particular case or class of cases require that a sample of the explosive which is to be imported be sent first to the Chemical Examiner for an analysis of its constituent parts.

Class 3.—Nitro-compound class. It is for explosives of this class that testing is chiefly required, in respect to the purity of their composition and their liability to liquefaction or exudation. The tests prescribed for nitro-compound explosives are contained in Schedule A attached to this rule.

Class 4.—Chlorate-mixture class. See Schedule A for remarks regarding the testing of this class*.

Class 5.—Fulminate class. No test has been laid down for explosives of the Fulminate class.*

Class 6.—Ammunition class. No test is required for explosives of the 1st division of this class. If the substances of which explosives of the 2nd and 3rd divisions are composed have to be tested under the preceding rules, they will be equally liable to be tested when enclosed in any case or contrivance and thus falling under the Ammunition class.

Class 7.—Firework class. Explosives of this class are not required to pass a test.

SCHEDULE A.

HEAT TEST AS APPLIED TO EXPLOSIVES OF THE NITRO-COMPOUND CLASS.

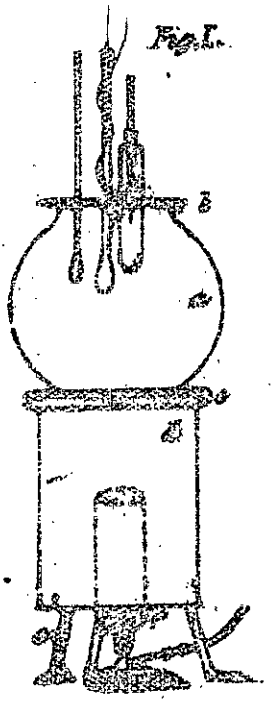
GENERAL INSTRUCTIONS.

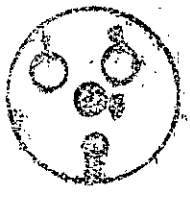
Apparatus required.

1. A water bath, consisting of a spherical glass or copper vessel [(*a*) Fig. I] of about 8 inches

* Licenses are not at present given for the importation into British India of any explosives of these classes.

diameter, and with an aperture of about 5 inches; the bath is filled with water to within a quarter of an inch of the edge. It has a loose cover of sheet copper about 6 inches in diameter (*b*), and rests on a tripod stand about 14 inches high (*c*), which is covered with coarse iron wire gauze (*e*), and is surrounded with a screen of thin sheet tin or copper (*d*). Within the latter is placed an Argand burner (*f*), with glass chimney. The cover (*b*) has four holes arranged as seen in Fig. II, No. 4 to receive the regulator, No. 3 the thermometer, Nos. 1 and 2 the test-tubes containing the gun-cotton or other materials to be tested. Around holes 1 and 2 on the under side of the cover are soldered three pieces of brass wire with points slightly converging (Fig. III); these act as springs and allow the test-tubes to be easily placed in position and removed.





*2. Scheibler's or Page's temperature regulator.

*3. Two cells of Le Clanché's battery No. 1. } if Scheibler's regulator is used.

*4. A few yards of insulated copper wire. }

5. Test tubes from $5\frac{1}{4}$ to $5\frac{1}{2}$ inches long, and of such diameter that they will hold from 20 to 22 cubic centimeters of water when filled to a height of 5 inches.

6. India-rubber stoppers, fitting the test-tubes and carrying an arrangement for holding the test-paper, *viz.*, a narrow glass tube passing through the centre of the stopper, drawn out so as to form a hook, or terminating in a platinum wire hook (Fig. IV).

7. A thermometer, with range not less than from 30° to 212° Fahrenheit.

8. A minute clock.

*This is not absolutely required, as the temperature of the bath can be kept constant by proper attention to the heating flame.

Materials required.

(*a.*) *Test-paper.*—The test-paper is prepared as follows :—45 grains of white maize starch (cornflour), previously washed with cold water, are added to $8\frac{1}{2}$ ounces of distilled water; the mixture is stirred, heated to boiling, and kept gently boiling for 10 minutes; 15 grains of pure potassium iodide (*i.e.*, which has been recrystallized from alcohol) are dissolved in $8\frac{1}{2}$ ounces of distilled water. The two solutions are thoroughly mixed and allowed to get cold. Strips, or sheets, of white English filter paper previously washed with water and redried, are dipped into the solution thus prepared, and allowed to remain in it for not less than 10 seconds; they are then allowed to drain and dry in a place free from laboratory fumes and dust. The upper and lower margins of the strips, or sheets, are cut off, and the paper is preserved in well-stoppered or cork, bottles, and in the dark.* The dimensions of the pieces of test-paper used are about $\frac{4}{10}$ inch by $\frac{8}{10}$ inch (10 mm. by 20 mm.).

(*b.*) *Standard tint paper.*—A solution of caramel in water is made of such concentration that when diluted one hundred times (10 cc. made up to 1 litre), the tint of this diluted solution equals the tint produced by the Nessler test in 100 cc. water containing 0·000075 grm. of ammonia or 0·00023505 grm. of chloride of ammonium. With this caramel solution lines are drawn on strips of white filter paper† by means of a clean quill-pen. When the marks thus produced are dry, the paper is cut into pieces of the same size as the test-paper previously described, in such a way that each piece has a brown line across it near the middle of its length, and only such strips are preserved in which the brown line has a breadth varying from $\frac{1}{2}$ mm. to 1 mm. ($\frac{1}{50}$th of an inch to $\frac{1}{25}$th of an inch).

1.—TESTING DYNAMITE, BLASTING GELATINE, AND OTHER EXPLOSIVE OF THE FIRST DIVISION OF THE NITRO-COMPOUND CLASS.

A.—DYNAMITE, ETC., ETC.

Nitro-glycerine preparations, from which the nitro-glycerine can be extracted in the manner described below, *must* satisfy the following test, otherwise they will not be considered as manufactured

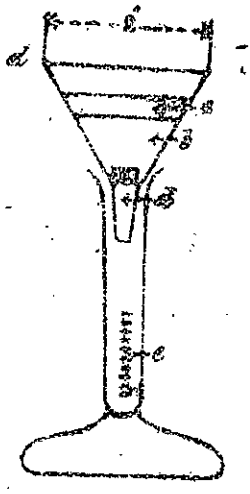
* When a paper is freshly prepared, and as long as it remains in good condition, a drop of dilute acetic acid put on the paper with a glass rod, produces no coloration. In process of time, however, the stronger the light to which the paper is exposed, the sooner a drop of the acid produces a brown or bluish coloration (a single hour of direct sunlight produces a marked effect), and whenever this is the case, the paper should be rejected. On this account it is advisable not to prepare too much of the test-paper at one time, but to prepare it fresh every month or so.

† This paper must be carefully washed with distilled water in the first instance, to remove any traces of bleaching matter and dried.

with " thoroughly purified nitro-glycerine " within the terms of the license.*

Apparatus required.

A funnel 2 inches across (*d*), a cylindrical measure divided into grains (*e*). (*See* sketch.)



Mode of Operation.

About 300 to 400 grains of dynamite (*b*) finely divided are placed into the funnel, which has previously been loosely plugged by some freshly-ignited asbestos (*a*).

The surface is smoothed by means of a flat-headed glass rod or stopper, and some clean washed and dried Kieselguhr (*c*) is spread over it to the depth of about $\frac{1}{8}$ inch.

Water is next carefully dropped from a wash bottle upon this Kieselguhr, and when the first portion has been soaked up, more is added; this is repeated until sufficient nitro-glycerine has been collected in the graduated measure (*e*) below.

If any water should have passed through with the nitro-glycerine, it should be removed with a piece of blotting paper, and the nitro-glycerine, if necessary, filtered through a dry paper filter.

Application of the Test.

The thermometer is fixed so as to be inserted through the lid of the water bath described under I, page 422, into the water (which is to be steadily maintained at a temperature of 160° Fahr.) to a depth of $2\frac{3}{4}$ inches. Fifty grains of nitro-glycerine to be tested, are weighed into a test-tube in such a way as not to soil the sides of the tube. A test-paper is

* This test, though at present looked upon as the most important, as far as testing the purity of the nitro-glycerine is concerned, is in England only one of several which any given sample of nitro-glycerine preparation has to satisfy in order to establish its compliance with the definition in the license.

fixed on the hook of the glass rod so that, when inserted into the tube it will be in a vertical position. A sufficient amount of a mixture of half distilled water and half glycerine to moisten the upper half of the paper is now applied to the upper edge of the test-paper, by means of a camel's-hair pencil, the cork carrying the rod and paper is fixed into the test-tube and the position of the paper adjusted, so that its lower edge is about half-way down the tube; the latter is then inserted through one of the perforations of the cover to such a depth that the lower margin of the moistened part of the paper is about five-eighths of an inch above the surface of the cover. The test is complete when the faint brown line which after a time makes its appearance at the line of boundary between the dry and moist part of the paper equals in tint the brown line of the standard tint paper.

The nitro-glycerine under examination will not be considered as "thoroughly purified" within the terms of the license unless the time necessary to produce the standard tint as above described is at least 15 minutes.

B.—BLASTING GELATINE, GELATINE DYNAMITE, AND ANALOGOUS PREPARATIONS.

Fifty (50) grains of blasting gelatine are to be intimately incorporated with one hundred (100) grains of French chalk.* The mixture is to be gradually introduced into a test-tube of the dimensions prescribed above for the dynamite heat test, with the aid of gentle tapping upon the table, between the introduction of successive portions of the mixture into the tube, so that when the tube contains all the mixture it shall be filled to the extent of $1\frac{3}{4}$ inches (one inch and three-quarters) of its height. The test-paper is then to be inserted and the heat is to be applied in the manner prescribed above for the dynamite heat test, and the sample tested is to withstand exposure to 160° Fahr. for a period of (10) ten minutes before producing a discoloration of the test-papers corresponding in tint to the standard colour test which is employed for governing the results of the dynamite heat test.

(For Exudation and Liquefaction tests for Blasting Gelatine, etc., etc., see Appendix, p. 429.)

N.B.—Non-gelatinized nitro-glycerine preparations, from which the nitro-glycerine cannot be expelled by water, are tested without any previous separation of the ingredients, the temperature being as above (160° Fahr.) and the time being seven (7) minutes.

* This can be readily effected by carefully working the two materials together with a wooden pestle in a wooden mortar.

The French chalk should be of good commercial quality, and after being carefully washed with distilled water and dried in a water oven, it should be exposed under a bell jar to moist air until it has taken up about 0·5 per cent. of moisture. It should then be bottled for use; and with ordinary care the limits of 0·5 per cent. can be maintained in keeping.

C.—CORDITE AND BALLISTITE.

1. *Apparatus required.*

The apparatus necessary for the application of the heat test to cordite is identical with that described above (see page 422) for explosives of the nitro-compound class generally* with the addition of a mill and a nest of sieves similar to those used at Waltham Abbey for preparing the cordite for testing (see instructions below).

2. *Preparation of the sample to be tested.*

Pieces half an inch long are cut from one end of every stick selected for the test; in the case of the thicker cordites, each piece so cut is further subdivided into about four portions. These cut pieces are then passed two or three times through the mill, the first portion of material which passes through being rejected on account of the possible presence of foreign matter from the mill. The ground material is put on the top sieve of the nest of sieves and sifted. That portion which has passed through the top sieve and been stopped by the second is taken for the test. After each sample has been ground, the mill must be taken to pieces and carefully cleaned.

3. *Application of the Test.*

The thermometer is fixed so as to be inserted through the lid of the water bath, described under I, page 422, so as to be immersed in the water to a depth of 2¾ inches. The water is maintained at a constant temperature of 180° Fahr. When this temperature is reached, 25 grains of the sifted cordite are put into one of the test-tubes, and collected at the bottom by gentle tapping. A test-paper is fixed on to the hook of the glass rod, so that when inserted into the tube it will be in a vertical position. A mixture of equal parts of distilled water and pure glycerine (Price's) is now applied to the upper edge of the test-paper by means of a camel's-hair pencil, in sufficient amount to moisten the upper half; the stopper carrying the rod and paper is fixed into the test-tube and the position of the paper adjusted so that its lower edge is about half-way down the tube; the latter is then inserted through one of the perforations of the cover to the same depth as the thermometer. The lower margin of the moistened part of the paper should then be about five-eighths of an inch above the surface of the cover. The test is completed when the faint brown line, which after a time makes its appearance at the margin between the wet and dry portions of the test-paper, equals in depth of tint the brown line drawn on the standard tint paper.

4. The time which elapses between the insertion of the test-tube and the completion of the test must not be less than 15 minutes.

* In the Waltham Abbey apparatus the cover (Fig. 11) has all the holes around the circumference, instead of having one in the centre and three around the circumference.

N.B.—In the case of ballistite the treatment is the same, except that when it is in a very finely granulated condition it need not be cut up.

II.—TESTING GUN-COTTON, SCHULTZE GUNPOWDER, E. C. POWDER, AND OTHER EXPLOSIVES OF THE 2ND DIVISION OF THE NITO-COMPOUND CLASS.

A.—GUN-COTTON, TONITE, ETC., ETC.

Sufficient material to serve for two or more tests is removed from the centre of the cartridge by gentle scraping, and, if necessary, further reduced by rubbing between the fingers.

The fine powder thus produced is spread out in a thin layer upon a paper tray 6 inches by 4½ inches, which is then placed inside a water oven, kept, as nearly as possible, at 120° Fahr.

The wire gauze shelves in the oven should be about 3 inches apart. The sample is allowed to remain at rest for 15 minutes in the oven, the door of which is left wide open.

After the lapse of 15 minutes the tray is removed and exposed to the air of the room for two hours, the sample being at some point within that time rubbed upon the tray with the hand, in order to reduce it to a fine and uniform state of division.

Application of the Test.

The cover of the water bath is fitted with the gas regulator which is inserted through the centre hole (No. 4). The thermometer is fixed into hole No. 3. The water in the bath is then heated to 170° Fahr., and the regulator set to maintain that temperature. Twenty grains of the sample to be tested are weighed out, placed in the test-tube, and gently pressed down until the specimen occupies a space of as nearly as possible $1\frac{5}{16}$ inches in a test-tube of the dimensions specified. A test-paper is affixed to the hook of the glass rod or tube, and moistened by touching the upper edge with a drop of distilled water containing 50 per cent. of Price's glycerine. The quantity of liquid used must be only sufficient to moisten about half of the paper. The cork carrying the rod and test-paper is then fixed into the test-tube, and the latter inserted into the bath to a depth of 2½ inches, measured from the cover, the regulator and thermometer being inserted to the same depth. The test-paper is to be kept near the top of the test-tube, but clear of the cork until the tube has been immersed for about five minutes. A ring of moisture will about this time be deposited upon the sides of the test-tube a little above the cover of the bath; the glass rod must then be lowered until the lower margin of the moistened part of the paper is on a level with the bottom of the ring of moisture in the tube; the paper is now closely watched. The test is complete when a very faint brown coloration makes its appearance at the line of boundary between the dry and moist parts of the paper.

The interval of time between the first insertion of the tube containing the sample of gun-cotton in the water at 170° and the first appearance of discoloration on the paper constitutes the test, and this interval of time must be not less than 10 minutes, or the sample will not be accepted as properly purified.

*B.—Gelatinized Gun-cotton Preparations.**

Twenty-five grains introduced into test-tube of the dimensions prescribed for the dynamite heat test, then proceed as for Blasting Gelatine, etc., taking the temperature at 180° Fahr., and the time as 15 minutes.

C.—Schultze Powder, E. C. Powder, Collodion Cotton, etc., etc.

Sufficient of the sample, without further mechanical division, is dried in the oven as above, and then exposed for two hours to the air The test as directed above for Compressed Gun-cotton, etc., is then applied, the minimum duration of test being the same, *viz.*, 10 minutes.

D.—Picric Acid.

(1) The material shall contain not more than 0·3 part of mineral or non-combustible matter in 100 parts by weight of the material dried at 160° Fahr.

(2) One hundred parts of the dry material shall not contain more than 0·3 part of total (free and combined) sulphuric acid, of which not more than 0·1 part shall be free sulphuric acid.

(3) Twenty grains of the material shall stand the heat test as laid down for dynamite (see *ante*, p. 423) for not less than 15 minutes.

E.—Ammonite, Bellite, Roburite, and Explosives of similar Composition.

These are required to stand the same heat test as gun-cotton (see *ante*, p. 427.)

III.—TESTING CHLORATE MIXTURES.

No tests have yet been laid down, as at present there are no authorized explosives of this class, but in the event of any being authorized, it would be necessary to require that they should satisfy the heat test laid down for gun-cotton, and from time to time the degree of sensitiveness to percussion or friction (especially a glancing blow) should be observed.

* If in a compressed form it should be broken up in the same manner as cordite and ballistite.

APPENDIX.

EXUDATION AND LIQUEFACTION TEST FOR BLASTING GELATINE, GELATINE DYNAMITE, AND ANALOGOUS PREPARATIONS.

Test for Liquefaction.

A cylinder of blasting gelatine is to be cut from the cartridge to be tested, the length of the cylinder to be about equal to its diameter and the ends being cut flat.

The cylinder is to be placed on end on a flat surface without any wrapper, and secured by a pin passing vertically through its centre.

In this condition the cylinder is to be exposed for one hundred and forty-four (144) consecutive hours (six days and nights) to a temperature ranging from 85° to 90° Fahr. (inclusive), and during such exposure the cylinder shall not diminish in height by more than one-fourth of its original height, and the upper cut surface shall retain its flatness and the sharpness of its edge.

N.B.—If the blasting gelatine and the gelatine dynamite to be tested be not made up in a cylindrical form, the above test is to be applied with the necessary modifications.

Test for Liability to Exudation.

There shall be no separation from the general mass of the blasting gelatine or gelatine dynamite of a substance of less consistency than the bulk of the remaining portion of the materials under any conditions of storage, transport, or use, or when the material is subjected three times in succession to alternate freezing and thawing, or when subjected to the liquefaction test hereinbefore described. (G. I., H. D., Notn. No. 1394, dated 8th July 1897, *vide* G. N. No. 5283, dated 14 idem.)

3. In supersession of Government Notification No. 9724, dated 24th December 1889, and in exercise of the powers conferred by Section 5 of the Indian Explosives Act, IV of 1884, and with the previous sanction of the Governor General in Council, His Excellency the Governor in Council is pleased to make the following rules to regulate the transport of explosives within the limits of the Port of Bombay :—

Rules.

Rules 1, 2, 3, 4, 5 and 7 to regulate the transport of explosives made by the Governor General in Council and published under Government of India Notifications Nos. 1393 and 1394, dated 8th July 1897, and Government of Bombay Notification No. 5283, dated 14th idem, shall, subject to the following rules, apply to the transport of explosives within the limits of the port of Bombay :—

Rule (*a*).—The Master of any vessel arriving with explosives exceeding in weight 100 lbs. on board as cargo shall give notice thereof to the Pilot immediately on his boarding.

Rule (*b*).—No sea-going vessel having explosives on board in excess of 100 lbs. weight, excepting *explosives of Division I* of the Ammunition class* (*class 6*) shall carry the same nearer to the shipping or city of Bombay than one mile eastward of the Middle Ground Battery, and no vessel shall within such limits take on board from any other vessel more than 100 lbs. weight of explosives or such quantity as with explosives already on board would exceed in weight 100 lbs. excepting *explosives of Division I* of the Ammunition class* (*class 6*).

Rule (*c*).—Every sea-going vessel having more than 100 lbs. of explosives on board, excepting *explosives of Division I* of the Ammunition class* (*class 6*) shall carry during the day a square red flag at the fore truck and at night a red light in the same place in addition to the Regulation lights, and every vessel or boat used in transporting explosives, excepting as aforesaid, in the port of Bombay, shall exhibit on a board or otherwise the word "Explosives" painted in white letters a foot long on a black ground on each side of the vessel or boat above the water line. Vessels and boats employed in landing or shipping explosives, and having on board more than 100 lbs. explosives, excepting as aforesaid, when required to remain at anchor, shall anchor to the eastward of the shipping and not nearer to any of the shipping than half a mile to the east thereof.

Rule (*d*).—The consignee, agent or other person concerned shall give written notice 48 hours before the expected arrival of any vessel having explosives in excess of 100 lbs. weight on board, excepting *explosives of Division* I of the Ammunition class* (*class 6*) or before shipment of any such explosives, to the Port Officer and the Superintendent of Water Police, and the latter shall depute a special officer to remain in charge of such explosives until the same have been deposited in the magazine, or the vessel carrying the same proceeds to sea.

Rule (*e*).—The amount of explosives conveyed in any one vessel or boat at any one time shall not exceed 560 lbs. unless the vessel or boat has a closed deck approved by the Port Officer.

No decked boat or vessel shall carry more than 50 tons of explosives at one time. This rule does not apply to sea-going vessels.

Rule (*f*).—The Port Officer is authorized, on occasions when he may deem expedient, to permit ammunition when properly packed in cases, when such cases do not exceed fifty in number, to be shipped on board a vessel lying at the ordinary anchorage

* Division 1.—Safety cartridge, safety fuzes for blasting, railway fog signals, percussion caps, fuzes for shells, and tubes friction for guns, provided that there be no more than 5 fuzes or 25 tubes in one package, and that the package be a hermetically sealed metal cylinder.

on the day or the day before such vessel is intended to sail. Shipments shall be effected under the same precautions and conditions as are prescribed in these rules. Ammunition permitted to be shipped under this rule must be taken in immediately on the boat going alongside, and no cargo boat or other vessel having fire on board shall be permitted to lie on the same side of the vessel during the time of such shipment.

Rule (*g*).—If any person commits a breach of any of the foregoing rules (*a*) to (*f*) he shall be *liable to a* fine which may extend to one thousand rupees.

(G. N. No. 9270, dated 22nd December 1897.)

4. In exercise of the powers conferred by Section 5 of the Indian Explosives Act IV of 1884, the Governor of Bombay in Council is pleased, with the previous sanction of the Governor General in Council, to make the following rules to regulate the transport of explosives within the limits of the port of Karáchi :—

Rules.

Rules 1, 2, 3, 4, 5 and 7 to regulate the transport of explosives made by the Governor General in Council and published under Government of India Notification No. 1417, dated the 24th June 1887, and Government of Bombay Notification No. 3956, dated the 29th June 1887, shall, subject to the following rules, apply to the transport of explosives within the limits of the port of Karáchi :

Rule (*a*).—The master of any vessel arriving with explosives exceeding 100 lbs. in weight on board as cargo shall give notice thereof to the pilot immediately on his boarding.

Rule (*b*).— No sea-going vessel having gunpowder or other explosives in excess of 100 lbs. weight on board entering the port of Karáchi shall proceed, during the prevalence of the south-west monsoon *i.e.*, in the interval between the 15th day of May and the 30th day of September (both days inclusive) farther than No. 5 Manora Swinging Mooring; or at any other season of the year, farther than the Deep Water Point Moorings, until such excess quantity has been discharged and deposited in the Port Department Magazine erected on the spit between the Island of Baba and the Quarantine Buildings, or such other place as Government may direct, and no vessel shall take on board within the above limits any quantity in excess of the 100 lbs. above mentioned. G. N. No. 3752 dated 3rd June 1891.

Rule (*c*).—When receiving or delivering such gunpowder or other explosives, the master of any vessel is to see that the platform in the vessel's hold, the gangways and combings of the hatchways are covered with tanned hides or other suitable paddings, that the barrels or boxes are carefully stowed and the hatches properly secured and

locked, and that the key remains in his own possession.

Rule (*d*).—A cushion (stuffed with white oakum) covered with leather is to be used for landing all such powder barrels or cases upon, whether in the hold of the vessel, in the boats, or on the wharf, when landing or discharging powder or other explosives.

Rule (*e*).—After the vessel has been discharged, the hides, hair-cloths, &c., are to be removed and the hold carefully cleaned out.

Every such vessel as last aforesaid when at anchor at night in the road-stead, or in the track of shipping, is to show a mast-head light, and every such vessel when under weigh at night is to show side-lights according to the Admiralty Regulations.

Rule (*f*).—Barges, lighters, boats and vessels carrying such gunpowder or other explosives, shall not when at anchor lie closer than half a mile from any of the shipping or public landing places.

G. N. No. 163, dated 11th January 1899.

Rule (*g*).—Every sea-going vessel having more than 100 lbs. of explosives on board excepting explosives of Division I* of the Ammunition class (class 6) shall carry during the day a square red flag at the fore truck and at night a red light in the same place in addition to the regulation lights. The master and all the crew are to remain on board until the gunpowder or other explosive stores are discharged, unless it be necessary to procure water or provisions, in which case notice is to be given to the Port Officer, but the vessel is not to be left without an officer on board.

Rule (*h*).—Vessels, barges and boats having or taking on board such gunpowder or other explosives, are to be kept scrupulously clean and free from loose gunpowder.

Rule (*i*).—In shipping or discharging such gunpowder or other explosives tanned hides or wadmiltilts are to be laid down in that portion of the vessel over which the cases or barrels pass.

Rule (*j*).—All boats laden with such gunpowder or other explosives are to remain at anchor off the magazine above-mentioned until orders are received to land the same.

Rule (*k*).—Only decked boats with closed-in hatches under lock and key (the latter to remain in charge of the official deputed to superintend the discharge of the gunpowder or other explosives) are to be employed for the conveyance of gunpowder or other explosives, and they are to have a moveable board attached to the bow and stern a foot long with the word "Explosives"

* Division I.—Safety cartridges, safety fuzes for blasting, railway fog signals, percussion caps, fuzes for shells, and tubes friction for guns, provided that there be no more than 5 fuzes or 25 tubes in one package, and that the package be a hermetically sealed metal cylinder.

painted in white letters on a black ground, and a red flag is to be kept hoisted during the time any such gunpowder or other explosives are on board.

Rule (*l*).—The consignee, agent or other person concerned shall give written notice, twenty-four hours before the expected arrival or intended shipment of any such explosives, to the Port Officer, who shall depute an officer to remain in charge of such explosives until the same have been deposited in the magazine or stowed on board any vessel conveying it elsewhere.

Rule (*m*).—The Port Officer is authorized on occasions when he may deem it expedient to permit ammunition properly packed in cases, when such cases do not exceed 50 in number, to be shipped on board a vessel lying at the ordinary anchorage on the day or the day before such vessel is intended to sail. Shipment shall be effected under the same precautions and conditions as are prescribed in the rules for the shipment of explosives on board vessels lying off the Deep Water Point Moorings. Ammunition permitted to be shipped under this rule must be taken in immediately on the boat going alongside, and no cargo-boat or other vessel having fire on board shall be permitted to lie on the same side of the vessel during the time of such shipment.

Rule (*n*).—If any person commits a breach of any of the foregoing rules (*a*) to (*m*), he shall be punished with fine which may extend to one thousand rupees.

Rule (o_1).—The following explosives are exempted under Section 5 (2) (*f*) from the operation of the above rules:— G. N. No. 6590, dated 18th September 1890.

Safety fuze; safety cartridges; percussion caps.

Rule (o_2).—The following explosives are exempted from the operation of the foregoing rules and of Rules 1, 2, 3, 4, 5 and 7 of the above mentioned rules of the Governor General in Council so far as regards the limits of the port of Karáchi, *viz.*, G. N. No. 7164, dated 2nd October 1893.

1 railway fog signals.

2 fire works.

(G. N. No. 9724 A, dated 24th December 1889.)

5. In exercise of the powers conferred by Section 5 of the Indian Explosives Act IV of 1884, the Governor of Bombay in Council is pleased, with the previous sanction of the Governor General in Council, to make the following rules to regulate the transport of explosives within the limits of the port of Adén:—

Rules.

Rules 1, 2, 3, 4, 5 and 7 to regulate the transport of explosives made by the Governor General in Council and published under Government of India Notification No. 1417, dated the 24th June 1887, and Government of Bombay Notification No. 3956,

dated the 29th June 1887, shall, subject to the following rules, apply to the transport of explosives within the limits of the port of Aden :

Rule (*a*).—The master of any vessel arriving with explosives exceeding in weight 100 lbs. on board as cargo shall give notice thereof to the pilot immediately on his boarding, but if any vessel is not boarded by a pilot it should display a distinguishing flag by day and a light by night.

G. N. No. 163 A, dated 11th January 1899.

Rule (*b*).—No sea-going vessel having explosives in excess of 100 lbs. weight on board intended to be discharged, moved or exposed in any way shall enter the inner harbour or anchor within 800 yards of the light ship or 600 yards of the nearest vessel, and no vessel or boat shall within the inner harbour or 800 yards of the light ship take on board from any other vessel or boat explosives exceeding 100 lbs. in weight. Every sea-going vessel having more than 100 lbs. of explosives on board excepting explosives of Division I* of the Ammunition class (class 6) shall carry during the day a square red flag at the fore truck and at night a red light in the same place, in addition to the regulation lights.

Rule (*c*).—Explosives brought to Aden for the use of Government may be landed at the Pier of Obstruction or at the Pilots' Bandar at Steamer Point and deposited in the magazines belonging to Government. Government consignees must send a properly qualified person to take delivery from the ship.

Rule (*d*).—Explosives brought to Aden on regular licenses for local consumption shall be landed at the Pilots' Bandar, and deposited in the Port Magazine until cleared in accordance with the license.

Rule (*e*).—Explosives brought to Aden for transhipment shall, if there is not sufficient accommodation in the Port Magazine, be discharged and deposited in decked boats with closed hatches; such boats shall lie at anchor at least 600 yards north from No. 14 Buoy in bad weather, and 600 yards north from the Lightship in fine weather, and shall keep a red flag flying until the cargo is transhipped on regular licenses. If such consignment can be stored in the Port Magazine, it shall be landed at the Pilots' Bandar and deposited in the Port Magazine until transhipped on regular licenses.

Rule (*f*).—No boats shall be used for the conveyance or deposit of explosives excepting decked boats approved by the Port Officer, with closed hatches under lock and key, and they shall have the word "Explosive" in white letters a foot long painted on a black ground on each side of the boat

* Division I.—Safety cartridges, safety fuzes for blasting, railway for signals, percussion caps, fuzes for shells, and tubes friction for guns, provided that there be no more than 5 fuzes or 25 tubes in one package, and that the package be a hermetically sealed metal cylinder.

above the water line and shall keep a red flag hoisted during the time any such explosives are on board, provided that safety cartridges not exceeding 4,000 in quantity may be landed in such manner as the Port Officer may direct, and shall be deposited in accordance with rule (*d*).

Rule (*g*).—All boats laden with explosives, when required to remain at anchor, shall lie in bad weather at least 600 yards north from No. 14 Buoy and in fine weather at least 600 yards north from the Lightship.

Rule (*h*).—The consignee, agent, or other person concerned in the explosives described in Rule (*e*) shall, within one hour after the arrival of the vessel, give written notice to the Port Officer and the Assistant Resident in charge Police and A'bkári, and the last-named officer shall depute a special officer to remain in charge of such explosives until the same has been transhipped.

Rule (*i*).—The Port Officer is authorized, on occasions when he may deem it expedient, to permit ammunition properly packed in cases, when such cases do not exceed fifty in number, to be shipped on board a vessel lying at the ordinary anchorage in the Inner Harbour on the day or day before such vessel is intended to sail; ammunition permitted to be shipped under this rule must be taken in immediately on the boat going alongside, and no cargo boat or other vessel having fire on board shall be permitted to lie in the vicinity of the vessel during the time of such shipment. All fires and lights on deck must be put out one hour before any explosives are taken on board or discharged, and the fires of the main boilers must be banked unless ordered to be put out.

Rule (*j*).—If any person commits a breach of any of the foregoing rules (*a*) to (*i*) he shall be punished with fine which may extend to one thousand rupees.

(G. N. No. 9724 B, dated 24th December 1889.)

6. The Chemical Analyser to Government is authorized to grant the certificates referred to in clause IX of Rule 6 of the rules published in the Notification of the Government of India No. 1417,* dated 24th June 1887, he being the officer qualified to certify to the purity of explosives and to pronounce an opinion upon the question of their deterioration. (G. R. No. 4516, dated 9th July 1888.)

* Superseded by the Notn. of the G. of I., No. 1393, dated 8th July 1897. (Bo. Govt. Notn. No, 5283, dated 14th idem.)

7. The Railway Administrations may refuse to receive for conveyance any consignment of explosives until they have satisfied themselves that the certificate referred to in Rule 6 (XI) of the Government of India Notification No. 1417,† dated 24th June 1887, tendered therewith, actually refers to that consignment and otherwise satisfies the conditions laid down in the rules. (G. R. No. 3803, dated 26th May 1893.)

† Ditto.

8. The Port Trustees, as Conservators of the Port of Bombay, should undertake the conduct of

prosecutions in cases of breaches of the rules applying to the transport of explosives within the port of Bombay published in Government Notification No. 9724,* dated 24th December 1889. (G. Rs. Nos. 4396, dated 23rd June 1890, and 4860, dated 14th July 1890.)

*Superseded by G. N. No. 9270, dated 22nd December 1897.

9. As all explosives which are the property of Government are exempted from the operations of the Indian Explosives Act, 1884, no rules under it can be framed which could apply to such explosives. In the opinion of the Government of India, it would be better that Government Departments should follow the local rules for regulating the transport of explosives within each port than that special rules for Government explosives generally applicable to the whole of British India should be prescribed. The local rules which should be observed in the transport of explosives within the limits of the ports of Bombay, Aden and Karáchi are those sanctioned in Home Department letter No. 2322,† dated 6th December 1889. (G. I., H. D., No. 1406, dated 21st July 1890; *vide* G. Rs. Nos. 5583, dated 11th August 1890, and 7164, dated 2nd October 1890.)

10. The prescribed rules for the conveyance by rail of explosives and dangerous goods should be observed in respect of acids and similar dangerous articles consigned from England to Government Departments up-country. No exception should be made in this matter in favour of Government property. (G. R. No. 1612, dated 3rd March 1891.)

11. Carbolic acid is one of a large group of articles which come within the category of "Dangerous goods" and are apt to leak badly in railway transit. The rules of the G. I. P. Railway Company for the packing and conveyance of these goods lay down that the articles "must be contained in strong tins or in bottles corked and sealed, which must be enclosed in wooden boxes and securely packed in sawdust" so that they may be loaded in ordinary wagons. If they are not so packed, it is more than probable that other consignments in the same wagon will be spoiled and the Railway Company will be liable for damage to other goods. The Railway Company is, therefore, right in refusing to accept such articles except when packed as required by the rules, and the Governor in Council does not see that any case has been made out for the relaxation of those rules.

12. If the Commissariat Department desires to send drums of carbolic acid in their original English packing it might do so in special vans, but it is for that Department to consider which is the cheaper mode of transit.

(G. R. No. 6559, dated 13th August 1892.)

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†*Vide* Government Notifications Nos. 9724,‡ 9724-A and 9724-B, dated 24th December 1889, *supra*.

‡Superseded by G. N. No. 9270, dated 22nd December 1897.

II.—MANUFACTURE, POSSESSION AND SALE.

1. In supersession of Government Notification No. 4116, dated 5th July 1887, and in exercise of the powers conferred by Sections 5 and 7 of the Indian Explosives Act (IV of 1884) and with the previous sanction of the Governor General in Council, His Excellency the Governor in Council is pleased to make the following rules to regulate the manufacture, possession and sale of explosives in the Presidency of Bombay.

Nothing in these rules relating to the possession of explosive shall apply in any port, as defined in the Indian Ports Act, 1889, for which the Local Government may have made, or may make, special rules under the Indian Explosives Act (IV of 1884) to regulate the possession of explosive.

Nothing in these rules shall apply to the manufacture, possession or sale of any explosive—

(*a*) by order of the Government, or

(*b*) by any person employed under the Government in the execution of the Indian Explosives Act (IV of 1884), or as a keeper of a magazine, artizan, soldier, sailor, policeman, or otherwise, or enrolled as a Volunteer under the Indian Volunteers Act (XX of 1869), in the course of his employment or duty as such.

Rules under the Explosives Act, 1884, for the Manufacture, Possession and Sale of Explosives in the Presidency of Bombay.

PRELIMINARY.

[Rule 1 is identical with Rule 1 under the Transport and Import Rules.]

MANUFACTURE, POSSESSION, AND SALE.

(*a*) *General Rules.*

2. An explosive shall not be manufactured except under and in accordance with the conditions of a license to manufacture the explosive granted under these rules :

Provided that this rule shall not apply—

(*a*) to the making of a small quantity of an explosive for the purpose of chemical experiment, and not for practical use or for sale ; or

(*b*) to the filling for private use, and not for sale, of any safety cartridges to the amount allowed by these rules to be possessed for private use.

3. Whoever manufactures an explosive in contravention of Rule 2, he shall be punishable with fine which may extend to three thousand rupees.

4. An explosive shall not be possessed except under, and in accordance with, the conditions of a license to possess the explosive granted under these rules :

Provided that this rule shall not apply—

(1) to a person possessing for his private use and not for sale—

(*a*) gunpowder to an amount not exceeding on the same premises 30 lbs., or in lieu of the said quantity of gunpowder 15 lbs. of any other explosive, or in lieu of any less amount of gunpowder not so possessed, half that amount of other explosive; or

(*b*) gunpowder contained in safety cartridges to an amount not exceeding 150 lbs., or in lieu thereof 150 lbs. of any explosive contained in ammunition of the 1st division of class 6, or in lieu of any less amount of gunpowder not so possessed, that amount of any explosive so contained:

Exception.—Nothing in the foregoing portion of the proviso to this rule shall be held to authorize the possession for private use—

(*a*) of any explosive of the 5th (fulminate) class; or

(*b*) of any explosive whereof the possession has been prohibited absolutely by notification under Section 6 of the Indian Explosives Act (IV of 1884); or

(*c*) where the possession of an explosive has by notification under that section been prohibited, subject to conditions, of any such explosive except subject to those conditions:

(2) to the possession of an unlimited quantity of fireworks, if obtained and intended for immediate use and not for sale, and if kept for a period not exceeding 14 days in a safe and suitable place, and with all due precautions for the public safety:

(3) to the possession of any explosive by a carrier or other person for the purpose of transport when the same is being kept or transported in accordance with the provisions of the rules made under the Indian Explosives Act (IV of 1884) with respect to the transport of such explosive: or

(4) to the possession of any gunpower, rockets or other explosive on board any ship in pursuance of the provisions of the Merchant Shipping Acts for the time being in force, or any order or regulation under those Acts.

(5) Whoever possesses an explosive in contravention of Rule 4 shall be punishable with fine which may extend to one thousand rupees.

6. An explosive shall not be sold except under, and in accordance with, the conditions of a license to sell the explosive granted under these rules:

Provided that this rule shall not apply to any person selling any explosive which for his own private use he lawfully possesses, to any person who is not legally prohibited from possessing the same.

7. Whoever sells an explosive in contravention of Rule 6 he shall be punishable with fine which may extend to five hundred rupees.

(*b*) *Licensing of the manufacture, possession and sale of gunpowder and certain explosives.*

8. Licenses to manufacture, possess and sell, or to possess and sell, or to possess an explosive of the 1st (gunpowder) class or of the 1st division of the 6th (ammunition) class, or of the 7th (firework) class, to such total amount during the currency of the license, and in such places as shall be approved by the licensing officer, may be granted in a Presidency town and its suburbs by the Commissioner of Police, and elsewhere by the District Magistrate :

Provided that nothing in any such license shall be deemed to entitle the license-holder to keep at the same time in the place to which the license applies more than 200 lbs. of gunpowder, 500 lbs. of explosive contained in ammunition of the 1st division of the 6th (ammunition) class, and 200 lbs. of fireworks, or any such less quantity of any of these explosives as the licensing officer may direct in this behalf.

9. The following fees shall be paid for every license granted under the last foregoing rule, namely :—

(1) a fee of twenty rupees for every license to manufacture, possess and sell the maximum quantity of explosive mentioned in the last foregoing rule, or any less quantity ;

(2) a fee of ten rupees for every license to manufacture, possess and sell half the quantity of explosive mentioned in the last foregoing rule, or any less quantity ;

(3) a fee of five rupees for every license to manufacture, possess and sell a fourth of the quantity of explosive mentioned in the last foregoing rule, or any less quantity ;

(4) a fee of ten rupees to possess and sell the maximum quantity of explosive mentioned in the last foregoing rule, or any less quantity ;

(5) a fee of five rupees to possess and sell half the quantity of explosive mentioned in the last foregoing rule, or any less quantity ;

(6) a fee of two rupees eight annas to possess and sell a fourth of the quantity of explosive mentioned in the last foregoing rule, or any less quantity ; and

(7) a fee of eight annas for every license to possess explosives.

10. Every license granted under Rule 8 shall be in Form A, B or C in the schedule hereto annexed, as the case may be, and shall be subject to the conditions prescribed therein.

11. Whoever commits a breach of any condition subject to which a license under Rule 8 is granted, shall be punishable with fine which may extend to five hundred rupees.

(c) Licensing of the manufacture of other explosives.

12. Licenses to manufacture explosives other than those referred to in Rule 8 shall be granted by the Governor General in Council on payment of such fees, in such form, for such term and subject to such conditions as the Governor General in Council may in each case prescribe:

Provided that the Governor General in Council shall, in the case of any such license, prescribe all the conditions which are hereinafter prescribed for licenses to possess an explosive of the same description and quantity as the manufacturing license is to cover.

13. Whoever commits a breach of any condition subject to which a license under Rule 12 is granted, shall be punishable with fine which may extend to three thousand rupees.

(d) Licensing of the possession of small quantities of other explosives.

14. Licenses for the possession, at such places as shall be approved by the licensing officer, of explosives other than those specified in Rule 8 may, if the explosive is not one of the 5th (fulminate) class, and if the quantity to be possessed at the same time does not exceed 50 pounds, be granted in a Presidency-town and its suburbs by the Commissioner of Police, and elsewhere by the District Magistrate.

15. Every license granted under Rule 14 shall be in Form D in the schedule hereto annexed, and shall be subject to the conditions prescribed therein. A fee of five rupees shall be paid for every such license.

16. Whoever commits a breach of any condition subject to which a license under Rule 14 is granted, shall be punishable with fine which may extend to one thousand rupees.

(e) Licensing of the possession of explosives generally.

17. Licenses for the possession of explosives other than those which may be issued under Rules 8 and 14 may, if the explosive is not one of the 5th (fulminate) class, be granted by the Local Government in accordance with the following procedure:—

(1) The applicant shall submit to the District Magistrate, or, in a Presidency-town and its suburbs, to the Commissioner of Police, an application in writing accompanied by a plan (drawn to scale) of the place in which it is proposed to keep the explosive (herein referred to as the magazine) and the site thereof.

(G. N. No. 2621, dated 18th April 1898).

Note.—If an application has already been made to the Local Government for the grant or approval of a site for a magazine or for permission to erect a magazine for the storage of the explosives in respect of which the application for license is being made, the fact should be so stated in the application for the license and a copy of any order or orders passed on the subject should be appended.

(2) The application shall specify such of the following matters as are applicable, namely—

(*a*) the boundaries of the land forming the site of the magazine, and either any belt of land surrounding the site which is to be kept clear, and the buildings and works from which it is to be kept clear, or the distances to be maintained between the magazine, or any part thereof, and other buildings and works;

[If a table of minimum distances has been prescribed in this behalf by the Governor General in Council, or the Local Government with the sanction of the Governor General in Council, the distances to be maintained between the magazine and the various kinds of buildings shall not be less than those specified for the explosive in question (when stored in the quantity intended) in the Government list of distances. Pending the issue of such table of distances as aforesaid, the requisite information as to the distance to be maintained between the magazine, or any part thereof, and other buildings and works, shall be given in Form G in the schedule hereto annexed, which form should be obtained by the applicant from the Chief Inspector of Explosives, Madras and Bombay Presidencies.] (G. N. No. 2621, dated 18th April 1898).

(*b*) the situation, character and construction of all the mounds, buildings, and works on or connected with the magazine, and the distances thereof from each other;

(*c*) the amount of explosives and of ingredients thereof wholly or partly mixed to be allowed at the same time within the boundaries of the magazine; and

(*d*) any special terms which the applicant may propose by reason of any special circumstances arising from the locality, the situation or construction of any buildings or works, or the nature of any process or otherwise.

(3) Upon receipt of the said application—

(*a*) The District Magistrate or Commissioner of Police, as the case may be, shall thereupon cause notice to be published of the application, and fix a date on which any persons shall be heard objecting to the establishment of a magazine on the proposed site, who have not less than seven clear days before the day of hearing sent to the said District Magistrate or Commissioner of Police, and to the applicant, notice of their intention to appear and object, with their name, address, and calling, and a short statement of the grounds of their objection.

(*b*) Where the site of the proposed magazine is situate within, or within one mile of, the limits of the jurisdiction of any Municipality or of any Port authority, the applicant shall serve on such authority notice of the application, and of the date of hearing by the District Magistrate or Commissioner of Police.

(*c*) The said notices shall be published and served at the cost of the applicant by the District Magistrate or Commissioner of Police not less than one month before the date of hearing.

(*d*) The District Magistrate or Commissioner of Police shall fix the date of hearing as soon as practicable after application is made to him, and the time so fixed shall be as soon as practicable after the expiration of the said month from the publication and service of the notices by the applicant.

(*e*) On consideration of the application, and on making such enquiry as may be deemed necessary, the District Magistrate or Commissioner of Police may dissent altogether from the establishment of such new magazine on the proposed site, or assent thereto, either absolutely, or on any conditions requiring additional restrictions or precautions.

(*f*) On the completion of the enquiry, the District Magistrate or Commissioner of Police shall forward the application with his recommendation to the Local Government. The Local Government may thereupon grant the license applied for, either in accordance with the recommendation of the District Magistrate or Commissioner of Police, or with the addition of any additional restrictions and precautions as may be deemed proper, or may refuse such license:

Provided that, if the distance of the proposed magazine from any dwelling-house, highway, street, public thoroughfare or public place is less than 200 yards, or if for any other reason it considers it advisable to do so, the Local Government shall, before granting the license, obtain the opinion of an Inspector of Expolsives after inspection of the place by him.

If a table of distances to be observed has been prescribed, it will be sufficient to see that the provisions regarding the minimum distance so laid down for the case is not infringed.

Provided that, if the application is for the renewal of a license issued prior to the issue of the table of distances, the Local Government may, if the Inspector of Explosives advises that this can be done without danger, renew the license without requiring that the table of distances shall be complied with.

(*g*) If the Local Government grant a license, it shall forward the same to the District Magistrate or Commissioner of Police, who, when satisfied that the magazine is sufficiently completed according to the license to justify the use thereof, shall confirm the license; but, until so confirmed, the license shall not come into force.

18. A fee of Rs. 20 shall be paid for every license granted under Rule 17.

19. Every license granted under Rule 17 shall be in Form E in the schedule hereto annexed, and shall be subject to the conditions prescribed therein.

19A. When the previous sanction of the Government of India and subject to any conditions or restrictions that may be deemed necessary, the Local Government may authorize the possession of explosives under Rule 17 in a floating magazine, and may direct the necessary modifications in the procedure prescribed in Rule 17 and in license Form E in such special cases.

20. Whoever commits a breach of any conditions subject to which a license under Rule 17 is granted shall be punishable with fine which may extend to one thousand rupees.

21. Licenses for the possession of explosives of the 5th (fulminate) class shall be granted by the Governor General in Council on payment of such fees and in such form, and subject to such conditions, as he may in each case prescribe.

22. Whoever commits a breach of any condition subject to which a license is granted under Rule 21 shall be punishable with fine which may extend to one thousand rupees.

(*e*) *Licensing of the sale of other explosives.*

23. Licenses for the sale of explosives other than those referred to in Rule 8 may be granted in a Presidency-town and its suburbs by the Commissioner of Police, and elsewhere by the District Magistrate, to any person licensed to possess the same.

24. A fee of five rupees shall be paid for every license granted under Rule 23.

25. Every license granted under Rule 23 shall be in Form F in the schedule hereto annexed, and shall be subject to the conditions therein prescribed.

26. Whoever commits a breach of any condition subject to which a license under Rule 23 is granted, shall be punishable with fine which may extend to five hundred rupees.

(*f*) *Supplementary.*

27. The officers hereinunder mentioned are authorized, within the areas respectively specified below,—

(*a*) to enter, inspect and examine any place, carriage or vessel in which an explosive is being manufactured, possessed, used, sold, transported or imported under a license granted under the Indian Explosives Act (IV of 1884) or in which they have reason to believe that an explosive has been or is being manufactured, possessed used, sold, transported or imported in contravention of that Act, or of the rules thereunder;

(*b*) to search for explosives therein;

(*c*) to take samples of any explosive found therein, on payment of the value thereof; and

(*d*) at their discretion to seize, detain, remove and, if necessary for the public safety, destroy any explosive found therein in respect of which there may be reason to believe that the provi-

sions of the said Act or of the rules thereunder have been contravened.

Areas.	*Officers.*
In all parts of the Presidency of Bombay.	The Superintendent of the Gunpowder Factory, Kirkee. The Assistant Superintendent of the Gunpowder Factory, Kirkee.
Within their respective districts.	All District Magistrates.
Within the areas respectively subject to their jurisdiction.	All Magistrates subordinate to the District Magistrate.
In the Town of Bombay and its suburbs.	The Commissioner of Police, Bombay, and all Police officers of rank not below that of Inspector, if specially deputed in that behalf by the Commissioner of Police.

Provided that—

(1) whenever the Superintendent or the Assistant Superintendent of the Gunpowder Factory, Kirkee, or any Magistrate subordinate to the District Magistrate seizes, detains or removes any such explosive, he shall report the fact to the District Magistrate; and that

(2) neither the Superintendent nor the Assistant Superintendent of the said Factory, nor any Magistrate subordinate to the District Magistrate, shall destroy any such explosive without the previous sanction of the District Magistrate.

23. A person licensed to possess an explosive shall not be required to take out a license for the manufacture of the explosive by reason that in connection with his magazine or licensed premises he fills for sale or otherwise any cartridges for small arms with the said explosive:

Provided that he observes the following regulations, namely:—

(1) There shall not be in the room in which such filling is being carried on more than five pounds of gunpowder, or an amount to be prescribed by the Local Government in this behalf of any other explosive, except it is made up into safety cartridges;

(2) Any work unconnected with the making of the cartridges shall not be carried on in the room while such filling is being carried on;

(3) There shall not be in the room while such filling is being carried on any fire nor any artificial light, except a light of such construction, position or character as not to cause any danger of fire or explosion;

(4) The room in which the filling is carried on shall be detached from the magazine, but in the immediate neighbourhood thereof, and at such distance therefrom as may be specified on the license by the authority granting the same; and

(5) The occupier shall give notice to the authority granting his license that he intends to carry on such filling of cartridges as is allowed by this rule.

28A. A person licensed to possess an explosive shall not be required to take out a license for manufacture by reason that, in connection with his magazine or licensed premises he, by filling cartridges, making charges, dry, sifting, fitting or otherwise, adapts or prepares the said explosive for use exclusively in his mine or quarry or in some excavation or work carried on by him, or under his control.

Provided that he observes the following regulations, namely:—

(1) There shall not be in the workshop in which such adaptation or preparation is carried on more than 100 lbs. of gunpowder, or an amount to be prescribed by the Local Government in this behalf of any other explosive;

(2) Any work unconnected with such adaptation or preparation shall not be carried on in the said workshop while adaptation or preparation is being carried on;

(3) The said workshop shall be detached from the magazine, but in the immediate neighbourhood thereof, and at such distance therefrom as may be specified on the license by the authority granting the same;

(4) An explosive of one description shall not be converted into the explosive of another description, and shall not be unmade or resolved into its ingredients; and

(5) The occupier shall give notice to the authority granting his license that he intends to carry on such adaptation or preparation as is allowed by this rule.

GENERAL.

29. Every license granted under these rules shall be liable to be forfeited on breach of any of the conditions subject to which it is granted.

30. If a person licensed to manufacture, possess or sell an explosive, dies or becomes bankrupt, or becomes mentally incapable or otherwise disabled, the person carrying on the business of such licensee shall not be liable to any penalty or forfeiture under the Indian Explosives Act (IV of 1884) or the rules thereunder for carrying on the business or acting under the license during such reasonable time as may be necessary to allow him to make an application to the authority granting the license for a new license in his own name during the currency of the unexpired portion of the original license. Such new license shall be granted on payment of one rupee.

31. The fees leviable under these rules shall be taken in the shape of impressed stamps. Applications for licenses or renewals of licenses shall, if not otherwise provided, be written on plain paper, the licenses themselves being issued on impressed stamps of value equal to the amount of fee leviable in respect of such licenses or renewals.

32. All licenses except licenses to manufacture an explosive under Rule 12, or to possess explosive of the 5th (fulminate) class under Rule 21, shall

expire on the 31st December of the year for which they are granted. Licenses granted under Rule 12, 21, shall be current for the terms therein specified. But the currency of a license may, unless the circumstances have so changed that the grant of a new license would either not be authorized under the Act and the rules, or is deemed objectionable by the licensing authorities an application previous to its expiration, be renewed on payment of the original fee.

33. When a license granted in accordance with these rules is lost, or accidentally destroyed, a duplicate may be granted to the licensee on payment of a fee of eight annas.

34. Any person holding a license, or acting under a license, granted in accordance with these rules, shall be bound to produce the same, when called upon to do so by any Inspector of Explosives or any Magistrate or by any Police officer in charge of a Police station, or by any Police officer of higher rank.

35. All Magistrates or other authorities acting under these rules shall perform their duties subject to the control of their executive superiors and of the Local Government.

36. Any authority empowered to grant a license under the foregoing rules may, if he thinks fit, direct by an order written on the license that it shall have the effect of a like license under the Indian Arms Act (XI of 1878).

G. N. No. 8364, dated 28th December 1898.

37. Any persons lawfully entitled under the Indian Arms Act (XI of 1878), or the rules thereunder, to possess any explosive coming under the head of ammunition as defined in that Act, may possess, without license under these rules, any such explosive in such quantities as may be prescribed, by that Act, or the rules thereunder, or, when no quantities are prescribed, in reasonable quantities for his own private use.

SCHEDULE.

Form A.

(*See Rule 8.*)

FEE— RUPEES IN STAMPS.

License to manufacture, sell, and possess gunpowder or an explosive of the 1st division of the 6th (Ammunition) class or of the 7th (Firework) class.

Granted in a Presidency-town and its suburbs by the Commissioner of Police and elsewhere by the District Magistrate.

Name, &c., of license-holder, and place of residence.	Place of business, factory, or shop.	Maximum quantity of explosive to be kept at any one time.	Description and quantity to be manufactured during the year.	Description and quantity to be possessed and sold during the year.	Date on which license expires.
					The 31st of December 189 .

_____ *District.*
_____ *189* .

Seal.

(Signature)

_____ *of* _____

Conditions.

1. This license is given subject to the provisions of the Indian Explosives Act (IV of 1884) and the rules thereunder.

2. The license-holder shall keep records and accounts of all explosive manufactured, of all stock in hand, and of all sales, in such form as the Local Government may from time to time direct.

3. The license-holder shall exhibit his stock and his books of manufacture and sales to any Magistrate or to any Police officer not below the rank of Inspector, when such officer may call upon him so to do.

4. The explosive shall be manufactured in a tent or any lightly constructed building exclusively appropriated for the purpose and separated from any dwelling-house by the distance—

(*a*) in the case of gunpowder, of 100 yards,

(*b*) in the case of an explosive of the 1st division of the 6th (Ammunition) class or of the 7th (Firework) class, of 50 yards,

and by the same distances from any highway, street, public thoroughfare, or public place. In the case of filling cartridges for small arms the operation may, if preferred, be carried out in the upper room of a building: Provided that no more than 5 lbs. of explosive (except such as may be contained in safety cartridges) shall be in the room where the operation is being carried on. In all other cases the manufacture shall be carried on in a one-storeyed building.

5. All sales of explosive under this license shall be effected upon the premises shown on the face of the license.

6. An explosive shall not be sold to any child apparently under the age of 13 years.

7. The explosive possessed by the licensee shall be kept in a substantially constructed uninflammable building, approved by such officer as the Local Government may prescribe, or in a fire-proof safe separated from any dwelling-house, highway, street, public thoroughfare, or public place by the distances laid down in condition No. 4, and made and closed so as to prevent unauthorized persons having access thereto, and to secure it from danger without:

Provided that a quantity not exceeding 50 lbs. of gunpowder, or in lieu of each pound of gunpowder not so kept, 2 lbs. of explosive contained in ammunition of the 1st division of class 6, or an equivalent quantity of an explosive of the 7th (firework) class, may be kept inside a dwelling-house, or in any building other than as last aforesaid, in a receptacle exclusively appropriated to keeping explosive:

Provided also that no explosive containing its own means of ignition (other than explosive of the 1st division of the 6th (Ammunition) class), shall be kept in a fire-proof safe.

8. All articles or substances of explosive or highly inflammable nature shall be kept at a safe

distance from the explosive and from any room or part of a building, fire-proof safe, or receptacle containing the same, and no one entering such room or part of any building or such safe or receptacle shall have any iron or steel in their possession, or attached to or on their boots or shoes.

9. Neither the building exclusively appropriated for the purpose of manufacturing or keeping the explosive, nor the fire-proof safe or receptacle, shall have any exposed iron or steel (except machinery necessary for the manufacture) in the interior thereof.

10. All explosives exceeding 5 lbs. in amount of the 1st division of the 6th (ammunition) class or of the 2nd division of the 7th (firework) class, and all other explosives exceeding 1 lb. in amount, shall be kept in a substantial case, bag, canister, or other receptacle made and closed so as to prevent the explosives from escaping, and is publicly exposed for sale or sold, the outermost receptacle containing such explosives shall have affixed the name of explosives in conspicuous characters by means of a brand or securely attached label or other mark.

11. Each description of explosive which may be kept under this license shall be separated by an intervening partition of such substance and character, or by such intervening space, as will effectually prevent explosion or fire in the one communicating with the other. Explosives of the same class, however, may be kept together; and gunpowder may be kept with safety fuzes.

*12. The license-holder shall affix to his shop or place of business a signboard as required by Rule 11 of the rules framed under the Indian Arms Act (XI of 1878) and shall post up in his shop a copy of Section 28 of that Act.

*13. The license-holder shall at the time of purchase endorse upon the license of every purchaser holding a license under Form VIII or IX of the forms prescribed under the Indian Arms Act (XI of 1878) the following particulars :—

(*a*) the name and address of the person who takes delivery of the articles sold ;

(*b*) the nature and amount of the articles sold ;

(*c*) the date of sale ;

and shall append his signature to the endorsement.

* These conditions are to be added only when the authority granting this license directs, by an order written thereon, that this license shall have the effect of a like license granted under the Indian Arms Act, (XI of 1878).

Form B.

(See Rule 8.)

FEE— RUPEES IN STAMPS.

License to sell and possess gunpowder or explosive of the 1st division of the 6th (Ammunition) class or of the 7th (Firework) class.

Granted in a Presidency-town and its suburbs by the Commissioner of Police and elsewhere by the District Magistrate.

Name, &c., of license-holder and place of residence.	Place of business, factory, or shop.	Maximum quantity of explosive to be kept at any one time.	Description and quantity of explosive to be possessed and sold during the year.	Date on which license expires.
				The 31st December 189 .

_____ *District,*
_____ *189* .

Seal.

(Signature)
_____ *of* _____

Conditions.

1. This license is given subject to the provisions of the Indian Explosives Act (IV of 1884) and the rules thereunder.

2. The license-holder shall keep records and accounts of all explosives in stock and of all sales, in such form as the Local Government may from time to time direct.

3. The license-holder shall exhibit his stock and his books and records of sales to any Magistrate or to any Police Officer not below the rank of Inspector when such officer may call upon him so to do.

4. All sales of explosive under this license must be effected upon the premises shown on the face of the license.

5. An explosive shall not be sold to any child apparently under the age of 13 years.

6. The explosive shall be kept in a substantially constructed uninflammable building approved by such officer as the Local Government may prescribe, or a fire-proof safe separated from any dwelling-house, highway, street, public thoroughfare, or public place by the prescribed distances,* and made and closed so as to prevent unauthorized persons having access thereto, and to secure it from danger from without:

Provided that 50 lbs. of gunpowder or, in lieu of each pound of gunpowder not so kept, 2 lbs. of explosive contained in ammunition of the 1st division of class 6, or an equivalent quantity of explosive of the 7th (firework) class, may be kept inside a dwelling-house, or in any building other than as last aforesaid, in a receptacle exclusively appropriated to keeping explosive:

*In the case of gunpowder, 100 yards.
In the case of explosive of the 1st division of the 6th (Ammunition) class of the 7th (Firework) class, 50 yards.

Provided also that no explosive containing its own means of ignition (other than explosive of the 1st division of the 6th (Ammunition) class) shall be kept in a fireproof safe.

7. All articles or substances of an explosive or highly inflammable nature shall be kept at a safe distance from the explosive and from any room or part of a building, fire-proof safe, or receptacle containing the same, and no one entering such room or part of any building or such safe or receptacle shall have any iron or steel in their possession, or attached to or on their boots or shoes.

8. Neither the building exclusively appropriated for the purpose of keeping the explosive, nor the fire-proof safe or receptacle referred to above, shall have any exposed iron or steel in the interior thereof.

9. All explosives exceeding 5 lbs. in amount of the 1st division of the 6th (ammunition) class or of the 2nd division of the 7th (firework) class, and all other explosives exceeding 1 lb. in amount shall be kept in a substantial case, bag, canister, or other receptacle made and closed so as to prevent the explosives from escaping, and when publicly exposed for sale or sold, the outermost receptacle containing such explosives shall have affixed the name of the explosives in conspicuous characters by means of a brand or securely attached label or other mark.

10. Each description of explosive which may be kept under this license shall be separated by an intervening partition of such substance and character, or by such intervening space, as will effectually prevent explosion or fire in the one communicating with the other. Explosives of the same class, however, may be kept together, and gunpowder may be kept with safety fuzes.

* 11. The license-holder shall affix to his shop or place of business a signboard as required by Rule 11 of the Rules framed under the Indian Arms Act (XI of 1878) and shall post up in his shop a copy of Section 28 of that Act.

†12. The license-holder shall at the time of purchase endorse upon the license of every purchaser holding a license under Form VIII or IX of the forms prescribed under the Indian Arms Act (XI of 1878), the following particulars :—

(*a*) the name and address of the person who takes delivery of the articles sold ;

(*b*) the nature and amount of the articles sold ;

(*c*) the date of sale ;

and shall append his signature to the endorsement.

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* In the case of gunpowder, 100 yards.

In the case of explosive of the 1st division of the 6th (Ammunition) class or of the 7th (Firework) class, 50 yards.

† These conditions are to be added only when the authority granting this license directs, by an order written thereon, that this license shall have the effect of a like license granted under the Indian Arms Act (XI of 1878).

Form C.

(*See Rule* 8.)

FEE—EIGHT ANNAS IN STAMPS.

License to possess gunpowder or an explosive of the 1st division of the 6th (Ammunition) class or of the 7th (Firework) class.

Granted in a Presidency-town and its suburbs by the Commissioner of Police and elsewhere by the District Magistrate.

Name, &c., of license-holder, and place of residence.	Description and quantity of explosive to be possessed during the year.	Place with full details where explosive is to be possessed.	Maximum quantity of explosive to be kept at any one time.	Date on which license expires.
				The 31st of December 189 .

_____ *District.* } (Signature)

_____ 188 . } Seal. _____ *of* _____

Conditions.

1. This license is given subject to the provisions of the Indian Explosives Act (IV of 1884) and the rules thereunder.

2. The explosive shall be kept in a substantially constructed uninflammable building approved by such officer as the Local Government may prescribe, or in a fire-proof safe separated from any dwelling-house, highway, street, public thoroughfare, or public place by the prescribed distances,* and made and closed so as to prevent unauthorized persons having access thereto, and to secure it from danger from without:

Provided that 50 lbs. of gunpowder, or in lieu of each pound of gunpowder not so kept, 2 lbs. of explosive contained in ammunition of the 1st division of class 6, or an equivalent quantity of explosive of the 7th (firework) class may be kept inside a dwelling-house or in any building other than as last aforesaid, in a receptacle exclusively appropriated to keeping explosive:

Provided also that no explosive containing its own means of ignition (other than explosive of the 1st division of the 6th (Ammunition) class) shall be kept in a fire-proof safe.

3. All articles or substances of an explosive or highly inflammable nature shall be kept at a safe distance from the explosive and from any room or part of a building, fire-proof safe, or receptacle containing the same, and no one entering such room or part of any building or such safe or receptacle shall have any iron or steel in their possession, or attached to or on their boots or shoes.

* In the case of gunpowder, 100 yards.

In the case of an explosive of the 1st division of the 6th (Ammunition) class or of the 7th (Firework) class, 50 yards.

4. Neither the building exclusively appropriated for the purpose of keeping the explosive, nor the fire-proof safe or receptacle referred to above shall have any exposed iron or steel in the interior thereof.

5. All explosive exceeding 5 lbs. in amount of the 1st division of the 6th (ammunition) class or of the 2nd division of the 7th (firework) class, and all other explosives exceeding 1 lb. in amount shall be kept in a substantial case, bag, canister or other receptacle made and closed so as to prevent the explosives from escaping.

6. Each description of explosive which may be kept under this license shall be separated by an intervening partition of such substance and character, or by such intervening space as will effectually prevent explosion or fire in the one communicating with the other. Explosives of the same class, however, may be kept together, and gunpowder may be kept with safety fuzes.

7. The license-holder shall at the time of purchase have the following particulars endorsed upon his license by the vendor from whom he purchases and under the vendor's signature:—

(*a*) the name and address of the person who takes delivery of the articles purchased;

(*b*) the nature and amount of the articles purchased;

(*c*) the date of purchase.

Form D.

(See Rule 14.)

FEE—FIVE RUPEES IN STAMPS.

License to possess explosives.

Granted in a Presidency-town and its suburbs by the Commissioner of Police and elsewhere by the District Magistrate.

Name, &c., of license-holder and place of residence.	Place of business or shop.	Description of Explosive.	Maximum quantity of explosive (not exceeding 60 lbs.) to be kept at any one time.	Date on which license expires.

_____ *District,*
_____ *189*

Seal.

(Signature) _____ *of* _____

Conditions.

1. This license is given subject to the provisions of the Indian Explosives Act (IV of 1884) and the rules thereunder.

2. The explosive shall be kept in a substantially constructed building exclusively appropriated for the purpose and detached from a dwelling-house,

and at a safe distance from any highway, street, public thoroughfare, or public place, made and closed so as to prevent unauthorized persons having access thereto, and to secure it from danger from without:

Provided that a quantity not exceeding 15 lbs. of such explosive may be kept inside any building other than as last aforesaid, in a receptacle exclusively appropriated to keeping explosive.

3. All articles or substances of an explosive or highly inflammable nature shall be kept at a safe distance from the explosive and from any building or receptacle containing the same.

4. Neither the building exclusively appropriated for the purpose of keeping the explosive nor the receptacle shall have any exposed iron or steel in the interior thereof.

5. All such explosives exceeding 1 lb. in amount shall be kept in a substantial case, bag, canister, or other receptacle made and closed so as to prevent the explosives from escaping.

6. Each description of explosive which may be lawfully kept under this license shall be separated by an intervening partition of such substance and character, or by such intervening space, as will effectually prevent explosion or fire in the one communicating with the other.

7. The license-holder shall, at the time of purchase, have the following particulars endorsed upon his license by the vendor from whom he purchases and under the vendor's signature:—

(*a*) the name and address of the person who takes delivery of the articles purchased;

(*b*) the nature and amount of the articles purchased;

(*c*) the date of purchase.

Form E.

(See Rule 17.)

FEE—TWENTY RUPEES IN STAMPS.

License to possess explosives.

Granted by the Local Government.

Name of license-holder and residence.	Boundaries of the land forming the site of the magazine to which the license applies.	Situation, character, and construction of the buildings and works connected with the magazine.	Description of explosive to be possessed.	Amount of explosive to be possessed at the same time in the magazine and within the boundaries of the site thereof.	Date on which license expires.

_____ *District,*
_____ *189* .

Seal.

(Signature)
_____ *of* _____

Conditions.

1. This license is given subject to the provisions of the Indian Explosives Act (IV of 1884) and the rules thereunder.

2. There shall not be at the same time in the magazine an amount of explosive exceeding the amount specified in the license.

3. The magazine shall be used only for the keeping of the explosive or explosives specified in the license, and of receptacles for, or tools or implements for work connected with the keeping of such explosive or explosives.

4. The interior of the magazine and the benches, shelves, and fittings therein, shall be so constructed or so lined or covered as to prevent the exposure of any iron or steel, and the detaching of any grit, iron, steel, or similar substances in such manner as to come into contact with the explosive, and such interior, benches, shelves, and fittings shall, so far as is reasonably practicable, be kept free from grit and otherwise clean; and in the case of any explosive being possessed which is liable to be dangerously affected by water, due precautions shall be taken to exclude water therefrom.

5. The magazine shall have attached thereto a sufficient lightning conductor which shall be tested at least once a year.

6. Before repairs are done to or in any part of a room or magazine, it shall, as far as is practicable, be cleaned by the removal of all explosive or mixed ingredients thereof, and the thorough washing out of such room or part; and after such cleaning, these conditions shall cease to apply to explosive until such room or part of the magazine is again taken into it.

7. Except after such cleaning, all tools and implements used in, or in any repairs to, any part of the magazine shall be made only of wood, copper, or brass, or some soft metal or material, or shall be covered with some safe and suitable material.

8. Due provision shall be made by the use of suitable working clothes without pockets, suitable shoes, searching and otherwise, or by some such means for preventing the introduction into the magazine of fire, lucifer matches, or any substance or article likely to cause explosion or fire, or any iron, steel or grit; but this rule shall not prevent the introduction of an artificial light of such construction, position, or character as not to cause any danger of fire or explosion.

9. No person shall smoke in any part of the magazine.

10. No person under the age of 16 years shall be employed in or enter the magazine except in the presence and under the supervision of some grown-up person.

11. Two or more descriptions of explosive, which may lawfully be possessed in a licensed magazine,

may be passed in the same magazine, if they are separated from each other by an intervening partition of such substance and character, or by such intervening space, as will effectually prevent explosion or fire in the one communicating with the other, subject to the following qualifications:—

(*a*) The various explosives of classes 1 (gunpower), 2 (nitrate-mixture), 3 (nitro-compound), and 4 (chlorate-mixture), safety fuze belonging to the 1st division of class 6 (ammunition), and such of the various explosives of the 2nd division of class 6 (ammunition) as do not contain any exposed iron or steel, may be kept with each other without any intervening partition or space.

(*b*) The various explosives of the 1st division of class 6 (ammunition) may be kept with each other without any intervening partition or space.

(*c*) Such of the various explosives of the 2nd division of class 6 (ammunition) as contain any exposed iron or steel may be kept with each other without any intervening partition or space.

(*d*) The various explosives of the 3rd division of class 6 (ammunition) may be kept with each other without any intervening partition or space.

(*e*) The various explosives of class 7 (firework) may be kept with each other without any intervening partition or space.

Save as aforesaid, two or more descriptions of explosives shall not be kept in the same magazine.

12. The licensee and every person employed in or about the magazine shall take all due precaution for the prevention of accidents by fire or explosion in the same, and for preventing unauthorized persons having access to the magazine or to explosives therein, and shall abstain from any act whatever which tends to cause fire or explosion, and is not reasonably necessary for the purpose of the work in such magazine.

13. The distances to be maintained between the magazine, or any part thereof, and other buildings and works shall be those specified in the distance* schedule (or "schedules" as the case may be) in Form H, attached to this license. G. N. No. 2261, dated 18th April 1898.

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*The form of this distance schedule is given below.

Form F.

(See Rule 23.)

FEE—FIVE RUPEES IN STAMPS.

License to sell explosives.

Granted in a Presidency-town and its suburbs by the Commissioner of Police and elsewhere by the District Magistrate.

Name, &c., of license-holder, and place of residence.	Place of business or shop.	Description of explosive to be sold.	Date on which license expires.

District.
189 .

Seal.

(Signature)
of

Conditions.

1. This license is given subject to the provisions of the Indian Explosives Act (IV of 1884) and the rules thereunder.

2. The license-holder shall keep records and accounts of all explosives in stock, and of all sales, in such form as the Local Government may from time to time direct.

3. Explosives shall not be sold to any child apparently under the age of 13 years.

4. All explosive exceeding 1 lb. in weight, when publicly exposed for sale or sold, shall be in a substantial case, bag, canister, or other receptacle made and closed so as to prevent the explosives from escaping, and the outermost receptacle containing such explosives shall have affixed the name of the explosives with the word "Explosive" added thereto in conspicuous characters by means of a brand or securely attached label or other mark.

Form G.

(*See Rule 17.*)

G. N. No. 2021, dated 18th April 1898.

FORM G.

EXPLOSIVES ACT, 1884.

Registry No.

Distances from the Magazine proposed to be established at _____

To be kept clear * from the undermentioned Buildings and Works.

Buildings and Works.	Distance to be kept clear, not less than	Reply.	Remarks.
Room used in connection with the Magazine in pursuance of Rule 28 framed under Section 5 of the Act	Yards.		
Workshop used in connection with the Magazine in pursuance of Rule 28-A framed under Section 5 of the Act	,,		
Mineral or private railway, whether worked by steam or otherwise	,,		
Highway or public foot-path	,,		
Promenade or open place of resort for the public or for persons carrying on any trade or business	,,		
Canal or navigable water	,,		
Dock	,,		
River wall or sea wall	,,		
Pier or jetty	,,		
Reservoir	,,		
Room or workshop in connection with another magazine, store, or registered premises ...	,,		
Any other room or workshop, or any shop ...	,,		
Magazine for explosive	,,		
Store for explosive	,,		
Furnace, kiln, or fire for the use of any boiler engine, or machine, or for any manufacturing purpose	,,		
Public railway	,,		
Dwelling-house, *with* the consent, in writing, of the occupier	,,		
Dwelling-house, *without* such consent ...	,,		
Factory not belonging to Government ...	,,		
Church or chapel	,,		
University, college, or school	,,		
Hospital or public institution	,,		
Town-hall or court of justice	,,		
Covered market...	,,		
Theatre or building wherein persons are accustomed to assemble	,,		
Public building in charge of the Government or of the Public Works Department on behalf of Government, or of the Municipality	,,		

Note.—The applicant for the license should state in the third column whether he is able to observe the distances assigned in the second column or not.

In any case where he is unable to observe the full distance assigned, he should state what distance he can observe, and in the column of "Remarks" should set forth the grounds, if any, upon which he relies as justifying such reduction of distance, *e.g.*, whether the Magazine will be protected by mounds, or by the natural features of the ground, or otherwise.

Signature of Applicant _____

Postal Adress of Applicant _____

Date _____

* The distances will be required to be kept clear not merely on the first establishment of the Magazine, but during the continuance of the license.

Form H.

(*Distance Schedule referred to in Condition 13 of Form E.*)

Form H.

EXPLOSIVES ACT, 1884.

Registry No.

Schedule.

Distances to be maintained between the Magazine and other buildings and works :—

From every	Not less than
Room used in connection with the magazine in pursuance of Rule 28 framed under Section 5 of the Act	
Workshop used in connection with the magazine in pursuance of rule 28-A, framed under Section 5 of the Act	
Mineral or private Railway, whether worked by steam or otherwise	
Highway or public foot-path	
Promenade or open place of resort for the public or for persons carrying on any trade or business	
Canal or navigable water	
Dock	
River wall or sea wall	
Pier or jetty	
Reservoir	
Room or workshop in connection with another magazine, store, or registered premises ...	
Any other room or workshop, or any shop ...	
Magazine for explosive	
Store for explosive	
Furnace, kiln or fire for the use of any boiler, engine or machine, or for any manufacturing purposes	
Public Railway	
Dwelling-house *with* the consent, in writing, of the occupier	
Dwelling-house *without* such consent	
Factory not belonging to Government ...	
Church or chapel	
University, college or school	
Hospital or public institution	
Town-hall or court of justice	
Covered Market	
Theatre or building wherein persons are accustomed to assemble	
Public building in charge of the Government or of Public Works Department on behalf of Government, or of the Municipality ...	

Provided that in the case of any building or work above-mentioned which is so screened from the Magazine by the natural features of the ground, or by good and sufficient artificial mounds of earth, as not to be visible from any part of such Magazine, the distance assigned above as that to be observed between such building or work and the Magazine may be reduced by one-half.

Provided also that in the case of any building or work above-mentioned which is so screened from the Magazine by an intervening hill that a line drawn from any part of such building or work to any part of such Magazine would pass through such hill, the distance assigned by this schedule as that to be observed between such building and work and the Magazine may be reduced by three-fourths, subject nevertheless to a notification in writing from Government Inspector

that, in his judgment, the intervening hill, in respect of which such reduction is claimed, is not of a character to justify such reduction, whereupon this proviso authorising such reduction as aforesaid shall be deemed not to apply in respect of the said building or work.

The distances to be maintained between the Magazine and such buildings and works as are specified in this schedule shall be those set forth in the said schedule; and if at any time after the grant of this license, by reason of the approach of any such buildings or works, the Magazine ceases to be beyond the distances therein specified, this license shall cease to authorise the use of the Magazine for the keeping of explosives.

Notes.—(*a*) Buildings and Magazines inside a Factory will be required to preserve the distances from each other specified in the first (Workshop) line of the schedule. The same rule will apply to two or more Magazines, *not* in a factory belonging to the same occupier or by mutual consent of the respective occupiers.

(*b*) Detonators may be kept in an annexe near to or adjoining a Magazine under the following conditions:—

(1) The amount of explosive contained in the detonators must not exceed 100 lbs. reckoned in the proportion of not less than 2¼ lbs. of explosive per 1,000 detonators. (This proportion represents roughly about 44,000 detonators of "sextuple" strength; with detonators of greater strength the number would be of course less.)

(2) The detonator annexe must be so constructed that not less than two feet of masonry and three feet of air-space shall intervene between any detonators in such annexé and the interior of the Magazine.

(G. N. No. 5579, dated 26th July 1897.)

2. Where the provisions of the Bombay Municipal Acts of 1872 and 1878 are in conflict with those of the Indian Explosives Act, the latter must prevail.

3. The desirability of amending Section 69 of the Bombay District Municipal Act of 1873 with a view to prevent the possibility of difficulties arising in Municipalities other than Bombay by the operation of that section which would enable Municipal Commissioners to treat as a nuisance places within the Municipality which the District Magistrate may have sanctioned as a place for the storage of explosives, will be borne in mind when legislation to amend that Act is taken in hand. In the meanwhile any District Magistrate, who contemplates issuing a license for the manufacture or storage of explosives within Municipalities, should be careful to ascertain and consider any objections the Municipality concerned may have to his doing so, before he issues such license. (G. R., G. D., No. 2660, dated 5th September 1887.)

4. The Indian Explosives Act does not require that two separate licenses should be taken out for the manufacture, possession and sale of the *same* explosive—one under that Act and the other under the Indian Arms Act, 1878. The intention of Sec-

tion 15 of the Explosives Act is that a license under that Act may have, as regards the explosives manufactured, the effect of a license under the Arms Act, if an endorsement be made on it to that effect by a competent officer empowered on that behalf by the rules under which the license is granted. (G. I., H. D., No. 1299 dated 10th June 1887; *vide* G. R. No. 4116, dated 5th July 1887.)

*Superseded by Govt. Notn. No. 5579, dated 26th July 1897.

5. The rules laid down in Government Notification No.* 4116, dated 5th July 1897, for regulating the manufacture, possession and sale of explosives in the Bombay Presidency, contemplate the inclusion in division 2 of the 7th class of explosives of such articles as fire-works intended for the use of steamers. (G. R. No. 3254, dated 21st May 1888.)

6. The following orders, *inter alia*, were passed by Government on the recommendations of the Committee appointed by Government Resolution No. 1966, dated 22nd March 1892, to enquire into the circumstances connected with the explosion, on 28th December 1891, of a dynamite magazine at Antop Hill:—

(1) That no new magazines should be constructed near those now existing at Antop Hill, that the exploded magazine should not be rebuilt on its former site, and that the existing and all future magazines at Antop Hill should be protected by traverses.

(2) That certificates by the Chemical Analyser should be insisted on for all consignments of explosives carried by rail in accordance with Rule 6, clauses IX, X and XI, of the rules contained in the Notification of the Government of India, No.† 1417, dated 24th June 1887.

†Superseded by G. of I. Notn. No. 1393, dated 8th July 1897 (Bo. G. N. No. 5283, dated 14th idem.)

(3) That efficient lightning conductors should be provided and that each conductor should be tested by a competent person at least once a year, the continuance of licenses to depend on the conductors being maintained in efficient order.

(G. R. No. 8703, dated 4th November 1892.)

7. In exercise of the powers conferred by Section 5, sub-section (2), clause (*b*), of the Indian Explosives Act (IV of 1884), and in modification of the rules made by the various Local Governments thereunder, the Governor General in Council is pleased to make the following rule as to the fee to be charged for licenses to possess explosives granted to contractors, cultivators and other persons:—

No fee shall be charged for licenses granted to contractors, cultivators or other persons to possess gunpowder, fuzes or other explosives in reasonable quantities when the same are proved to the satisfaction of the officer granting the license to be required *bonâ fide*, in the case of licenses granted to contractors, for blasting purposes, and, in the case of licenses granted to cultivators or other persons, for blasting purposes in connection with agricultural works or works of public utility.

2. Home Department Notification No. 1989, dated the 25th July 1888, is hereby cancelled.

(G. I., H. D., Notn. No. 518, dated 19th April 1893; *vide* G. N. No. 2950, dated 26th idem.)

III.—MISCELLANEOUS.

1. *Publication of draft rules.*—Under Section 18, sub-section (2), of the Indian Explosives Act, 1884, the Governor-General in Council is pleased to prescribe that drafts of proposed rules under the Act shall be published—

(*a*) When the authority making the rules is a Local Government, in one issue of the local Official Gazette in English and in such other language or languages as the Local Government may direct; and

(*b*) when the authority making the rules is the Governor-General in Council, in one issue of the *Gazette of India* in English, and in one issue of the local Official Gazette (if any) of every Local Government in British India in English and in such other language or languages as the Local Government may direct.

This notification supersedes Home Department Notification No. 1437, dated the 14th August 1885.

(G. I., H. D., Notn. No. 1964, dated 2nd September 1887; *vide* G. N. No. 6038, dated 7th idem.)

2. *Purchase of Explosives.*—The Government of India having considered the question of the source from which it is desirable to obtain explosives for use in India, has decided that it is, on the whole, preferable to purchase them, as necessity arises, in this country. (G. I., F. & C., No. 6809, dated 26th December 1887; *vide* G. R. No. 364, dated 19th January 1888.)

3. *Shipment of Gunpowder, &c., on passenger vessels.*—The shipment of gunpowder and ammunition on passenger vessels may be allowed when packed in the manner described in the Regulations for Her Majesty's Transport Service, 1886 (*vide* Articles 28, 29 and 31) and stowed in magazines constructed (at the cost of the owner) in accordance with the specification given in Appendix XXVI of the Regulations, subject to the approval of the Port Officer.* (G. I., F. & C., No. 2891, dated 11th July 1891; *vide* G. R. No. 5556, dated 13th August 1891.)

* This order was passed pending the embodiment in the contemplated rules under the Native Passenger Ships Act of rules for the conveyance of explosives on passenger vessels.